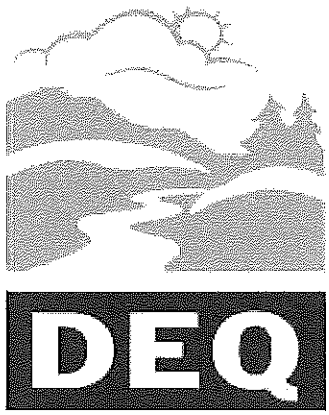
OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS 04/12/1996



State of Oregon
Department of Environmental Quality

A G E N D A

ENVIRONMENTAL QUALITY COMMISSION MEETING
April 12, 1996
DEQ Conference Room 3A
811 S. W. Sixth Avenue
Portland, Oregon

Friday, April 12, 1996: Regular Meeting beginning at 8:30 a.m.

Notes:

Because of the uncertain length of time needed for each agenda item, the Commission may deal with any item at any time in the meeting. If a specific time is indicated for an agenda item, an effort will be made to consider that item as close to that time as possible. However, scheduled times may be modified if agreeable with participants. Anyone wishing to listen to the discussion on any item should arrive at the beginning of the meeting to avoid missing the item of interest.

Public Forum: The Commission will break the meeting at approximately **11:00 a.m.** for the Public Forum if there are people signed up to speak. The Public Forum is an opportunity for citizens to speak to the Commission on environmental issues and concerns not a part of the agenda for this meeting. The public comment period has already closed for the Rule Adoption items and, in accordance with ORS 183.335(13), no comments can be presented to the Commission on those agenda items. Individual presentations will be limited to 5 minutes. The Commission may discontinue this forum after a reasonable time if an exceptionally large number of speakers wish to appear.

A. Approval of Minutes

B. Approval of Tax Credits

C. **Action Item**: National Marine Fisheries Service Request for Waiver to Total Dissolved Gas Standard

D. **Informational Item**: Umatilla Army Depot Chemical Demilitarization: Hazardous Waste Issues and Emergency Response

E. **Informational Item**: Portland Area Ozone Maintenance Plan Status

F. **Informational Item**: Portland Area Carbon Monoxide Maintenance Plan Status

G. Commissioners' Report (Oral)

H. **Informational Item**: Budget Development

I. **Informational Item**: Legislative Concepts

J. Director's Report (Oral)

Hearings have already been held on the Rule Adoption items and the public comment period has closed. In accordance with ORS 183.335(13), no comments can be presented by any party to either the Commission or the Department on these items at any time during this meeting.

The Commission has set aside May 16-17, 1996, for their next meeting which will be held in Portland. The May 16th portion of this meeting will be held from 10:00 am to 4:00 pm at the World Trade Center Auditorium, 25 SW Salmon, bridge level. The May 17th meeting will begin at 8:30 am in the DEQ Conference Room 3A, 811 SW 6th Ave.

Copies of staff reports for individual agenda items are available by contacting the Director's Office of the Department of Environmental Quality, 811 S. W. Sixth Avenue, Portland, Oregon 97204, telephone 229-5395, or toll-free 1-800-452-4011. Please specify the agenda item letter when requesting.

If special physical, language or other accommodations are needed for this meeting, please advise the Director's Office, (503)229-5395 (voice)/(503)229-6993 (TTY) as soon as possible but at least 48 hours in advance of the meeting.

March 19, 1996

Approved _____
Approved with Corrections _____

Minutes are not final until approved by the EQC

ENVIRONMENTAL QUALITY COMMISSION
Minutes of the Two Hundred and Fiftieth Meeting

February 23, 1996
Regular Meeting

The Environmental Quality Commission meeting was convened at 8:30 a.m. on Friday, February 23, 1996, in conference room 3A at the Department of Environmental Quality, 811 S.W. Sixth Avenue, Portland, Oregon. The following members were present:

William Wessinger, Chair
Henry Lorenzen, Member (Commissioner Lorenzen joined the meeting at 8:45 a.m.)
Linda McMahan, Member
Tony Van Vliet, Member
Carol Whipple, Member

Also present were Larry Knudsen, Assistant Attorney General, Oregon Department of Justice, Langdon Marsh, Director, DEQ, and other DEQ staff.

Note: Staff reports presented at this meeting, which contain the Department's recommendations, are on file in the Office of the Director, 811 S.W. Sixth Avenue, Portland, Oregon 97204. Written material submitted at this meeting is made a part of this record and is on file at the above address. These written materials are incorporated in the minutes of the meeting by reference.

Chair Wessinger called the meeting to order at 8:30 a.m.

A. Approval of minutes

Commissioner McMahan moved approval of the meeting minutes for:

September 29-29, 1995, work session and regular meeting
November 17, 1995, regular meeting
December 28, 1995, telephone conference call
January 11-12, 1996, regular meeting

Commissioner Whipple seconded the motion and it was approved with four yes votes (Commissioner Lorenzen was not present for the vote).

B. Approval of tax credits

Mike Downs, Water Quality Administrator and Charles Bianchi, Water Quality Division, presented this item to the Commission. The Department recommended the Commission approve certification for the tax credit applications listed below.

Application No.	Applicant	Description
TC 4550	PED Manufacturing, Ltd. $51,307	A Water Pollution Control wastewater treatment facility consisting of two 1500 gallon equalization tanks, a 2 cubic foot filter press, a 500 gallon acid tank, a 600 gallon treatment tank and associated equipment.
TC 4552	Northwest Brewers Grain of Oregon, Inc. $211,738	A Water Pollution Control leachate collection and disposal facility consisting of the construction of trench grades at storage bunkers, piping, a pump station including a PALO Model 480-01 pump, a 52,600 cubic foot bentonite lined lagoon and associated electrical and plumbing equipment.
TC 4566	Knox Seed, Inc. $24,000/65%	An Air Pollution Control "field burning" facility consisting of a John Deere 156 hp 4640 tractor for operating a flail chopper and harrowing/rolling equipment.
TC 4576	Larry and Mary Lou Neher $110,807/52%	An Air Pollution Control "field burning" facility consisting of a 180' x 124' x 24' pole construction grass seed straw storage building.

In addition, the Department recommended that Tax Credit Certificate 3221 for Riedel Environmental Technologies be revoked because the claimed facility

was unable to operate to control pollution by the December 31, 1995 deadline established by the Commission at their December 10, 1993 meeting.

Commissioner McMahan moved approval of the tax credits as proposed by the Department and revocation of Tax Credit Certificate 3221 (Riedel Environmental Technologies). Commissioner Whipple seconded the motion and it was passed with four yes votes. Commissioner Lorenzen was not present for the vote.

The Commission then reviewed the status of the land facility portion of Tax Credit Application 4523 for Quality Trading Company, L.L.C. The majority of the costs for this application were approved by the Commission at the December 28, 1995 meeting, but decision on the land facility portion was deferred until this meeting. The Department recommended using the cost allocation methodology that was applied previously to a claim by the Johnson Controls Group to the Quality Trading claim but to revise the methodology that will apply to all future claims. Commissioner Whipple moved to approve the Department's recommendation with the proviso that a modified methodology will be used for this type of tax credit in the future. Commissioner McMahan seconded the motion and it was passed unanimously (five yes votes).

C. Rule Adoption: Division 22 Delisting of Acetone as a Volatile Organic Compound (VOC)

John Rusciqno, Acting Manager, Air Quality Division, summarized the item and Ben Allen, Air Quality Division, presented it to the Commission. The Department recommended revision of the Division 22 (area and RACT sources) definition of "volatile organic compound" (VOC) by adding acetone to the list of compounds considered to have negligible photochemical reactivity. The recommendation was based on the recent "delisting" of acetone by the Environmental Protection Agency.

Commissioner Van Vliet moved to approve the Department's recommendation; Commissioner Lorenzen seconded the motion. The motion was unanimously approved.

D. James River Corporation, Biochemical Oxygen Demand Effluent Limit Reduction

Barbara Burton, Water Quality Manager, Western Region, and Tim McFettridge, Western Region, presented this item to the Commission. The

current National Pollutant Discharge Elimination System (NPDES) permit for the James River paper mill in Halsey contains numeric effluent limits for Biochemical Oxygen Demand. Effective March 1, 1996, the numeric limits were scheduled to be removed and there would be no discharge allowed unless the Commission set a new numeric effluent limit. The facility would be unable to operate without having a discharge of wastewater containing some level of Biochemical Oxygen Demand.

The Department recommended that the Commission set new limits for Biochemical Oxygen Demand during the summer period for the James River mill. The summer limits would be protective of water quality and would represent a 25% reduction over the current Biochemical Oxygen Demand effluent limits.

Commissioner Whipple moved approval of the Department's recommendations. Commissioner McMahan seconded the motion and it was unanimously approved.

Note: The following agenda items were taken out of order.

H. Commissioners' Report

Commissioner McMahan reported that the Oregon Communities Foundation has established a fund from United Sewerage Agencies to do projects in the Tualatin Valley. She attended a conference on February 17, 1996, on the Tualatin, designed to increase public awareness, identify problems and discuss effects of the recent flooding.

There were no other Commissioners' Reports.

I. Director's Report

Director Marsh briefed the Commission on the status of flood cleanup. He reported that Department staff worked in sixteen counties and five additional cities assisting with cleanup and related debris disposal. Drum recovery on the lower Willamette River is nearly complete, and he indicated drum and tank recovery work would likely be completed on the lower Columbia River within the next week. The Department is scheduled to assist smaller communities from Clatsop to Lane counties in collecting and disposing of household hazardous wastes. Agency staff have worked throughout the flood cycle with sewage treatment plant operators and major manufacturers to either prevent or correct toxic releases. The majority of sewage treatment plants are back on line

although not all are fully treating sewage at this time. Water testing on February 8, 1996, in the Willamette River between Harrisburg and downtown Portland showed extremely high bacteria counts. However, by February 13, all test locations met water quality standards for bacteria. A followup series of samples was taken February 21 and will be analyzed for a full range of toxics.

The final portion of the Director's Report was presented later in the meeting.

E. Action Item: Variance Application of Richard C. Gruetter

The Commission was asked to either uphold or reverse either part or all of the Hearings Officer's preliminary Order and Opinion dated December 13, 1995. Todd Bradley represented Mr. Gruetter and Sherman Olson, Martin Loring and and Rodney Weick of the Water Quality Division presented the Department's recommendation to deny the variance request as per the variance officer's initial denial dated June 28, 1994. Mr. Bradley expressed concerns regarding the introduction of any new evidence during an appeal. Following a discussion of the stability of the site and the adequacy of the proposed drainfield length, Commissioner Lorenzen moved to adopt the hearings officer's proposed order with two additional conditions:

1. Periodic inspections of the system would be required to determine if there was evidence of creep on the property which could cause a septic system failure. The cost of these inspections would be the responsibility of the property owner.

2. If creep caused a failure in the system, there is not adequate room on the property for a replacement system. The property owner would be required to a) indemnify the Department from third party suits for damage from failure and b) either hook up to a municipal sewer (if available) or develop a water pollution control facility that would be capable of handling the flow and obtain a permit for same. Development of this system would also require maintenance and periodic monitoring at the property owner's expense.

Richard Gruetter's representative, Mr. Todd Bradley, agreed in principle to these terms, with specific details regarding frequency of monitoring, etc. to be worked out between Mr. Gruetter and the Department.

Commissioner Whipple seconded the motion to adopt the hearings officer's order with the proposed revisions, and the motion was unanimously approved.

F. Action Item: National Marine Fisheries Service Request for Waiver to Total Dissolved Gas Standard

The Commission received a request from the National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service (USFWS) for a waiver to the total dissolved gas standard on the Columbia River to enable the spilling of water over hydroelectric projects to assist outmigrating Snake and Columbia River salmonid smolts.

The waivers were requested for the following periods:

- from 8:00 p.m. on March 14, 1996, to 8:00 p.m. on March 23, 1996, for spill over Bonneville Dam for the Spring Creek Hatchery release and

- from midnight on April 10, 1996, to midnight on August 31, 1996, for spill over all Columbia River projects.

Russell Harding and Gene Foster of the Department's Water Quality Division presented this item. Mr. Harding introduced Mark Schneider, representing NMFS and Fred Olney, representing USFWS to the Commission. Each of the agencies presented details of its request to the Commission and was available for questions.

Following these presentations, a panel of two experts on total dissolved gas and the effects on fish made brief presentations to the Commission. James Buchal represented the Direct Services Industries and Brian Brown spoke for NMFS. The Commissioners then asked questions relating to spill, total dissolved gas and specifics of the monitoring program.

In their discussions, Commissioners indicated concern over two major issues relating to the spill program. First, the Commissioners felt it might be premature to move ahead with approval of the program in the absence of the final report by the expert gas panel convened by NMFS. This report is due to be released soon. Secondly, Commissioners were concerned about the apparent reluctance of the fisheries agencies in sharing their findings regarding this issue. They indicated they would like to see a full public process introduced to enable

the monitoring program and the effects of the spill program to be discussed in an open forum.

Commissioners decided to split the request into two separate parts: the Spring Creek Hatchery spill and the wider Columbia River spill. Commissioner Van Vliet moved approval of the variance to the total dissolved gas standard allowing the Spring Creek Hatchery spill at the Bonneville Dam to proceed. Commissioner Lorenzen seconded the motion. A roll call vote was taken by Director Marsh with the following votes (for: Wessinger, McMahan and Van Vliet; against: Lorenzen and Whipple) and the motion was passed.

Commissioner Lorenzen moved to defer consideration of the wider Columbia River variance request until staff could receive and review the NMFS expert gas panel report, and until staff develop language to be incorporated into the Commission's consideration of the issue which would provide for an open, public process in relation to the spill program. Commissioner Whipple seconded the motion. A roll call vote was taken by Director Marsh, and the motion was unanimously approved.

Note: The meeting was temporarily adjourned at 1:00 pm and reconvened at 1:45 p.m. by Commissioner Wessinger.

Public Forum

Dr. Warren Westgarth, former Lab Division Administrator at the Department, spoke to the Commission and complimented the Department on its good work during the recent flooding. He also encouraged the Department to work with NPDES permit holders in shared efforts to rebuild following the extensive flood damage.

Informational Item: Governor's Coastal Salmon Restoration Initiative

Jim Martin of the Governor's Office presented this item to the Commission. The Governor's Coastal Salmon Restoration Initiative is focused on preserving and restoring native coastal salmon populations and preventing the need for a federal threatened or endangered listing of coho salmon under the Endangered Species Act. Mr. Martin indicated that ten State agencies, including the Department, involved in this process will prepare action plans that define roles and contributions to the recovery initiative. This effort will include program measures, provide a review of existing regulations, policies, programs and voluntary efforts as well as identifying potential new partnerships. Mr. Martin

emphasized that State agencies will outreach to local and statewide stakeholders, watershed councils and governing bodies. He distributed material including an information sheet and a copy of Governor Kitzhaber's February 2, 1996, letter to President Clinton outlining Oregon's plan to develop a restoration plan to promote rebuilding of coastal coho.

I. **Director's Report** (continued)

Director Marsh reported that the Confederated Tribes of the Umatilla Indian Reservation have written to Governor Kitzhaber and President Clinton formally requesting a moratorium on issuing the permits for construction at the Umatilla Army Depot. The Department has asked the Attorney General's opinion as to whether or not , and under what circumstances, the state has authority to grant a moratorium. The Director noted that mayors of several local communities and other community leaders have expressed their support for the incineration project and opposition to any moratorium. A worksession is planned with the Commission on April 12, 1996, regarding the hazardous waste permit and emergency response, and another session on May 16, 1996, on the air permit and risk assessment. The May 16th meeting will also include an expert panel discussion on alternatives to incineration.

Director Marsh reported that the Department continues in efforts to organize outreach and involvement activities with stakeholders involved in the 303(d) list of water quality limited streams and the new standards the Commission adopted in January. A consortium of organizations have announced intent to oppose certain listings on the proposed 303(d) list.

The Director indicated that the Department had submitted its final comments to the Secretary of State's office regarding an audit of the Department's Hazardous Waste Management Program as of 1993.

There was no further business and Chair Wessinger adjourned the meeting at 2:20 p.m.

Environmental Quality Commission

☐ Rule Adoption Item
X Action Item
☐ Information Item

Agenda Item B
April 12, 1996 Meeting

Title:
Approval of Tax Credit Applications

Summary:
New Applications - Five (5) tax credit applications with a total facility cost of $438,134 are recommended for approval as follows:

- 2 Hazardous Waste facilities with a total cost of: $ 25,095
- 3 Water Quality Underground Storage Tank (UST) facilities costing: $413,039

No applications with claimed facility costs exceeding $250,000 are included in this Report.

The Department recommends that the Commission approve a request by Ms. Cynthia Squires, the sole proprietor of Glide Auto Service, BP, to transfer the remaining value of tax credit certificate 2518 from Mr. Harold H. Young, the previous owner, to Cynthia Squires, the current owner and operator of the pollution control facility.

The Department also recommends approval of a request by Globe Metallurgical, Inc. to transfer the remaining values of tax credit certificates 1975 and 2384 from Dow Corning Corporation to Globe Metallurgical, Inc., the current owners and operator of the facilities covered by the certificates.

Department Recommendation:

Approve tax credit certificates for 5 applications as presented in Attachment A of the staff report.

Report Author | Division Administrator | Director

March 22, 1996

†Accommodations for disabilities are available upon request by contacting the Public Affairs Office at (503)229-5317(voice)/(503)229-6993(TDD).

State of Oregon
Department of Environmental Quality

Memorandum[†]

Date: April 12, 1996

To: Environmental Quality Commission

From: Langdon Marsh, Director

Subject: Agenda Item B, April 12, 1996 EQC Meeting

Approval of Tax Credit Applications

Statement of the Need for Action

This staff report presents the staff analysis of pollution control facilities tax credit applications and the Department's recommendation for Commission action on these applications. The following is a summary of the applications presented in this report:

Tax Credit Application Review Reports:

Application No.	Applicant	Description
TC 4422	Portland General Electric Company $10,292	A Hazardous Waste facility consisting of a self-contained storage unit for leaking PCB transformers and drums that contain used oil and other hazardous materials.
TC 4424	Portland General Electric Company $14,803	A Hazardous Waste facility consisting of a self-contained storage unit for leaking PCB transformers and drums that contain used oil and other hazardous materials.
TC 4524	Truax Harris Energy Company $215,553/92%	An Underground Storage Tank (UST) facility consisting of four doublewall fiberglass tanks and doublewall piping, spill containment basins, turbine leak detectors, sumps, an oil/water separator, automatic shutoff valves and Stage I vapor recovery equipment.

[†]A large print copy of this report is available upon request.

Application No.	Applicant	Description
TC 4538	Robert W. Hays/Michael J. Moran $59,853/98%	A Storage Tank (UST/AST) facility consisting of epoxy lining for four aboveground storage tanks, an epoxy lined secondary containment dike, doublewall plastic piping, spill containment basins, sumps and a tank gauge system.
TC 4551	Blackman's 4-Way Grocery $137,633/87%	An Underground Storage Tank (UST) facility consisting of three doublewall fiberglass tanks and doublewall piping, spill containment basins, a tank gauge system, turbine leak detectors, monitoring wells, sumps, automatic shutoff valves and Stage I and II vapor recovery equipment.

Background and Discussion of Issues

There are no issues presented for discussion in this report.

Authority to Address the Issue

ORS 468.150 through 468.190 and OAR 340-16-005 through 340-16-050 (Pollution Control Facilities Tax Credit).

ORS 468.925 through 468.965 and OAR 340-17-010 through 340-17-055 (Reclaimed Plastic Product Tax Credit).

Alternatives and Evaluation

Summary of Any Prior Public Input Opportunity

The Department does not solicit public comment on individual tax credit applications during the staff application review process. Opportunity for public comment exists during the Commission meeting when the applications are considered for action.

Conclusions

- The recommendations for action on the attached applications are consistent with statutory provisions and administrative rules related to the pollution control facilities and reclaimed plastic product tax credit programs.

- Proposed April 12, 1996 Pollution Control Tax Credit Totals:

Certificates	Certified Costs*	Certified Allocable Costs**	No.
Air Quality	$ 0	$ 0	0
CFC	0	0	0
Field Burning	0	0	0
Noise	0	0	0
Hazardous Waste	25,095	25,095	2
Plastics	0	0	0
SW - Recycling	0	0	0
SW - Landfill	0	0	0
Water Quality	0	0	0
UST	413,039	376,706	3
TOTALS	$438,134	$401,801	5

- Calendar Year Totals Through February 23, 1996:

Certificates	Certified Costs*	Certified Allocable Costs**	No.
Air Quality	0	0	0
CFC	0	0	0
Field Burning	224,132	148,855	4
Noise	0	0	0
Hazardous Waste	0	0	0
Plastics	10,123	10,123	1
SW - Recycling	0	0	0
SW - Landfill	0	0	0
Water Quality	263,045	263,045	2
UST	0	0	0
TOTALS	$497,300	$422,023	7

*These amounts represent the total facility costs. The actual dollars that can be applied as credit is calculated by multiplying the total facility cost by the determined percent allocable and dividing by 2.

**These amounts represent the total eligible facility costs that are allocable to pollution control. To calculate the actual dollars that can be applied as credit, the certifiable allocable cost is multiplied by 50 percent.

Recommendation for Commission Action

A) The Department recommends that the Commission approve certification for the tax credit applications as presented in Attachment A of the Department Staff Report.

B) The Department recommends approval of a request by Ms. Cynthia Squires, dba Glide Auto Service, BP, to transfer the remaining value of tax credit certificate 2518 from Mr. Harold H. Young, the previous owner, to Cynthia Squires the sole proprietor and operator of the pollution control facility. Documentation of ownership was provided by the requestor.

C) The Department also recommends approval of a request for transfer of the remaining values of tax credit certificates 1975 and 2384 from Dow Corning Corporation to Globe Metallurgical, Inc. A letter signed by both parties is included in this report.

Intended Followup Actions

Notify applicants of Environmental Quality Commission actions.

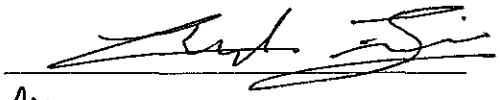
Attachments

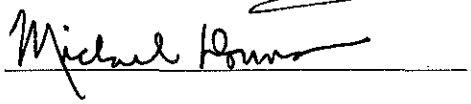
A. Pollution Control Tax Credit Application Review Reports.

Reference Documents (available upon request)

1. ORS 468.150 through 468.190.
2. OAR 340-16-005 through 340-16-050.
3. ORS 468.925 through 468.965.
4. OAR 340-17-010 through 340-17-055.

Approved:

Section: 

Division: 

Report Prepared By: Charles Bianchi

Phone: 229-6149

Date Prepared: March 22, 1996

Charles Bianchi
APREQC

GLIDE AUTO SERVICE, BP

20244 N. Umpqua Highway
Glide, Oregon 97443

Telephone 503-496-3286

February 29, 1996

DEQ
Management Services Division
Tax Credit Program
811 SW Sixth Ave.
Portland, Oregon 97204

To Whom it May Concern:

I purchased the Glide BP gas station at 20244 North Umpqua Hwy, Glide, Oregon, in October, 1994. During the 1994 tax year I did not have enough income to warrant use of the tax credit available to me.

Pursuant to OAR 150-315.304(10), I would like to have Certificate number 2518 transferred into my name as an individual sole proprietor of Glide BP, now known as Glide Auto Service, BP. A copy of the Certificate and a letter referencing same is enclosed with this request.

If you have any questions, or need further information, please contact me. My home address is 1038 Pine Ridge Dr., Glide, Oregon 97443, phone 541-496-3249 or 496-0426.

Sincerely,

Cynthia Squires

enc.

STATE OF OREGON
DEPARTMENT OF ENVIRONMENTAL QUALITY

Certificate No. 2518
Date of Issue 6/14/91
Application No. T-3383

POLLUTION CONTROL FACILITY CERTIFICATE

Issued To:	Location of Pollution Control Facility:
Harold H. Young 1668 Whistlers Lane Roseburg, OR 97470	20244 N. Umpqua Hwy. Glide, OR

As: ( )Lessee (x)Owner

Description of Pollution Control Facility:

Installation of four fiberglass tanks and piping, spill containment basins and a tank monitor.

Type of Pollution Control Facility:
( )Air ( )Noise (x)Water ( )Solid Waste ( )Hazardous Waste ( )Used Oil

Date Facility was Completed: 11/8/89 Placed into Operation: 10/8/89

Actual Cost of Pollution Control Facility: $54,918.00

Percent of Actual Cost Properly Allocable to Pollution Control: 85%

Based upon the information contained in the application referenced above, the Environmental Quality Commission certifies that the facility described herein was erected, constructed or installed in accordance with the requirements of subsection (1) of ORS 468.165, and is designed for, and is being operated or will operate to a substantial extent for the purpose of preventing, controlling or reducing air, water or noise pollution or solid waste, hazardous wastes or used oil, and that it is necessary to satisfy the intents and purposes of ORS Chapters 454, 459, 467 and 468 and rules adopted thereunder.

Therefore, this Pollution Control Facility Certificate is issued this date subject to compliance with the statutes of the State of Oregon, the regulations of the Department of Environmental Quality and the following special conditions:

1. The facility shall be continuously operated at maximum efficiency for the designed purpose of preventing, controlling, and reducing the type of pollution as indicated above.
2. The Department of Environmental Quality shall be immediately notified of any proposed change in use or method of operation of the facility and if, for any reason, the facility ceases to operate for its intended pollution control purpose.
3. Any reports or monitoring data requested by the Department of Environmental Quality shall be promptly provided.

NOTE: The facility described herein is not eligible to receive tax credit certification as an Energy Conservation Facility under the provisions of Chapter 512, Oregon Law 1979, if the person issued the Certificate elects to take the tax credit relief under ORS 316.097 or 317.072.

Signed: _____

Title: William P. Hutchison, Jr., Chairman

Approved by the Environmental Quality Commission on the 14th day of June, 1991.

MY101556

March 15, 1996

Mr. Charles Bianchi
Environmental Quality Commission
Water Quality Division
118 SW Sixth Avenue
Portland, OR 97204-1390

Dear Mr. Bianchi:

On July 1, 1993, Globe Metallurgical Inc. (EIN: 31-1209363) acquired Dow Corning Corporation's (EIN: 38-0495575) plant located at 1801 Aster St., Springfield, Oregon 97405. Prior to the sale of the Springfield plant, Dow Corning Corporation certified certain pollution control facilities which it placed in service and operated at the Springfield location. There remain unutilized pollution control credits related to these facilities and certificates previously issued. Effective immediately, Dow Corning Corporation wishes to transfer the following certificates and any remaining pollution control credits to Globe Metallurgical Inc.:

Certificate Number 1975
Dated: January 22, 1988
Value of Facility: $246,245 (100% allocable to pollution control activities)
Description: Micropul Pulse Baghouse and support

Certificate Number 2384
Dated: March 11, 1991
Value of Facility: $644,868 (100% allocable to pollution control activities)
Description: Main Baghouse converted from fiberglass to gortex bags

We respectfully request that the transfer of the above certificates and related credits be made as soon as possible. If you have any questions regarding the above, or should you require any additional information in order to accomplish the requested transfer, please call John Lalley, of Globe Metallurgical Inc., at (216) 328-0145, Joseph H. Mulders, of Dow Corning Corporation at (517) 496-5318, or Manny Hudock, of KPMG Peat Marwick LLP, at (412) 232-1548.

We, the undersigned, have discussed and agree to the above requested transfer:

Dow Corning Corporation

By: James V. Chittick
James V. Chittick
Vice President
Executive Director Manufacturing & Engineering
Date: March 15, 1996

Globe Metallurgical Inc.

By: Arden Sims
Arden Sims
President and
Chief Executive Officer
Date: March 15, 1996

P:\lp\Finance\kam\1996\globe.doc

Certificate No. 1975

Date of Issue January 22, 1988

Application No. T-2372

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

POLLUTION CONTROL FACILITY CERTIFICATE

Issued To: Dow Corning Corporation Springfield Plant 1801 Aster Street Springfield, OR 97477	Location of Pollution Control Facility: 1801 Aster Street Springfield, Oregon
As: ☐ Lessee ☒ Owner	

Description of Pollution Control Facility:
Mikropul pulse type baghouse, model#121S1220TRH, S/N 855198H1; supporting structure; piping; Stutorbilt blower, model #5LVF, S/N 249223 with motor; Leeds & Northrup Speedomax recorder, model 100, 3 Ducon Fluid Transport rotary feeders and one pneumatic conveyor system with screw conveyor feed.

Type of Pollution Control Facility: ☒ Air ☐ Noise ☐ Water ☐ Solid Waste ☐ Hazardous Waste ☐ Used Oil

Date Pollution Control Facility was completed: November 11, 1985 Placed into operation: November 11, 1985

Actual Cost of Pollution Control Facility: $246,245

Percent of actual cost properly allocable to pollution control: 100%

Based upon the information contained in the application referenced above, the Environmental Quality Commission certifies that the facility described herein was erected, constructed or installed in accordance with the requirements of ORS 468.175 and subsection (1) of ORS 468.165, and is designed for, and is being operated or will operate to a substantial extent for the purpose of preventing, controlling or reducing air, water or noise pollution or solid waste, hazardous wastes or used oil, and that it is necessary to satisfy the intents and purposes of ORS Chapters 454, 459, 467 and 468 and rules adopted thereunder.

Therefore, this Pollution Control Facility Certificate is issued this date subject to compliance with the statutes of the State of Oregon, the regulations of the Department of Environmental Quality and the following special conditions:

1. The facility shall be continuously operated at maximum efficiency for the designed purpose of preventing, controlling, and reducing the type of pollution as indicated above.
2. The Department of Environmental Quality shall be immediately notified of any proposed change in use or method of operation of the facility and if, for any reason, the facility ceases to operate for its intended pollution control purpose.
3. Any reports or monitoring data requested by the Department of Environmental Quality shall be promptly provided.

NOTE — The facility described herein is not eligible to receive tax credit certification as an Energy Conservation Facility under the provisions of Chapter 512, Oregon Law 1979, if the person issued the Certificate elects to take the tax credit relief under ORS 316.097 or 317.072.

Signed James E. Petersen

Title James E. Petersen, Chairman

Approved by the Environmental Quality Commission on the 22nd day of January, 1988.

Certificate No. 2384
Date of Issue 03/11/91
Application No. T-2411

State of Oregon

DEPARTMENT OF ENVIRONMENTAL QUALITY

POLLUTION CONTROL FACILITY CERTIFICATE

Issued to: Dow Corning Corp. Springfield Plant 1801 Aster Street Springfield, OR 97477	**Location of Pollution Control Facility:** Springfield, OR
As: ( ) Lessee (X) Owner	
Description of Pollution Control Facility: Modification to No. 3 furnace main baghouse, installation of new fan and duct work on No. 3 furnace tap and modification to No. 3 furnace hood and Tap hood to assist in fume capture.	
Type of Pollution Control Facility: (X) Air ( ) Noise ( ) Water ( ) Solid Waste ( ) Hazardous Waste ( ) Used Oil	
Date Facility was completed: 11/15/88	**Placed into Operation:** 11/15/88
Actual Cost of Pollution Control Facility: $644,868.00	
Percent of actual cost properly allocable to pollution control: 100 Percent	

Based upon the information contained in the application referenced above, the Environmental Quality Commission certifies that the facility described herein was erected, constructed or installed in accordance with the requirements of subsection (1) of ORS 468.165, and is designed for, and is being operated or will operate to a substantial extent for the purpose of preventing, controlling or reducing air, water or noise pollution or solid waste, hazardous wastes or used oil, and that it is necessary to satisfy the intents and purposes of ORS Chapters 454, 459, 467 and 468 and rules adopted thereunder.

Therefore, this Pollution Control Facility Certificate is issued this date subject to compliance with the statutes of the State of Oregon, the regulations of the Department of Environmental Quality and the following special conditions:

1. The facility shall be continuously operated at maximum efficiency for the designed purpose of preventing, controlling, and reducing the type of pollution as indicated above.
2. The Department of Environmental Quality shall be immediately notified of any proposed change in use or method of operation of the facility and if, for any reason, the facility ceases to operate for its intended pollution control purpose.
3. Any reports or monitoring data requested by the Department of Environmental Quality shall be promptly provided.

NOTE: The facility described herein is not eligible to receive tax credit certification as an Energy Conservation Facility under the provisions of Chapter 512, Oregon Law 1979, if the person issued the Certificate elects to take the tax credit relief under ORS 316.097 or 317.072.

Signed _____

Title William P. Hutchison, Jr., Chairman

Approved by the Environmental Quality Commission on the 11th day of March, 1991.

Application No. TC 4422

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

---

1. Applicant

Portland General Electric Co.
121 S.W. Salmon St. 10WTC-04-02
Portland, OR 97204

The applicant is an electric utility that produces and sells electricity at various locations in Oregon.

Application was made for tax credit for a hazardous material (hazardous waste, PCB, used oil, solvents, leaking PCB transformers) containment facility.

2. Description of Facility

The facility is used for containing and storing hazardous and toxic materials, including leaking PCB transformers, drums containing used oil, solvents, and hazardous wastes. The facility provides for cover and containment of any spilled material.

Claimed Facility Cost: $10,292.00

3. Procedural Requirements

The facility is governed by ORS 468.150 through 468.190, and by OAR Chapter 340, Division 16.

The facility met all statutory deadlines in that:

Installation of the facility was substantially completed on March 31, 1995, and the application for final certification was found to be complete on March 4, 1996, within 2 years of substantial completion of the facility.

4. Evaluation of Application

a. The facility is eligible because the sole purpose of the facility is to prevent, control and substantially reduce the quantity of hazardous material that could otherwise escape into the environment from a release. This prevention and or control and reduction is accomplished by the use of a containment structure that effectively prevents a release of hazardous materials into the environment.

b. Eligible Cost Findings

In determining the percent of the pollution control facility's cost allocable to pollution control, the following factors from ORS 468.190 have been considered and analyzed as indicated:

1) The extent to which the facility is used to recover and convert waste products into a salable or usable commodity.

No waste products are recovered or converted into a salable or usable commodity.

2) The estimated annual percent return on the investment in the facility.

There is no return on investment.

3) The alternative methods, equipment and costs for achieving the same pollution control objective.

The alternative chosen is an acceptable alternative for storing and preventing the release of hazardous waste materials into the environment.

4) Any related savings or increase in costs which occur or may occur as a result of the installation of the facility.

None.

5. Summation

   a. The facility was constructed in accordance with all regulatory deadlines.

   b. The facility is eligible for final tax credit certification in that the sole purpose of the facility is to prevent, control, and substantially reduce the quantity of hazardous materials that could potentially be released into the environment. This prevention and or control and reduction is accomplished by the use of a containment facility that effectively reduces the risk of release of waste materials into the environment.

   c. The facility complies with applicable statutes, rules and permit conditions.

   d. The portion of the facility cost that is properly allocable to pollution control is 100%.

6. Director's Recommendation

   Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of $10,292.00 with 100% allocated to pollution control be issued for the facility claimed in Tax Credit Application No. TC 4422.

Gary Calaba, gjc
TC4422
(503) 229-6534
March 4, 1996

Application No. TC 4424

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

---

1. Applicant

Portland General Electric Co.
121 S.W. Salmon St. 10WTC-04-02
Portland, OR 97204

The applicant is an electric utility that produces and sells electricity at various locations in Oregon.

Application was made for tax credit for a hazardous material (hazardous waste, PCB, used oil, solvents, leaking PCB transformers) containment facility.

2. Description of Facility

The facility is used for containing and storing hazardous and toxic materials, including leaking PCB transformers, drums containing used oil, solvents, and hazardous wastes. The facility provides cover and containment of any spilled material.

Claimed Facility Cost: $14,803.00

3. Procedural Requirements

The facility is governed by ORS 468.150 through 468.190, and by OAR Chapter 340, Division 16.

The facility met all statutory deadlines in that:

Installation of the facility was substantially completed on March 31, 1995, and the application for final certification was found to be complete on March 4, 1996, within 2 years of substantial completion of the facility.

4. Evaluation of Application

a. The facility is eligible because the sole purpose of the facility is to prevent, control and substantially reduce the quantity of hazardous material that could otherwise escape into the environment from a release. This prevention and or control and reduction is accomplished by the use of a containment structure that effectively prevents a release of hazardous materials into the environment.

b. Eligible Cost Findings

In determining the percent of the pollution control facility's cost allocable to pollution control, the following factors from ORS 468.190 have been considered and analyzed as indicated:

1) The extent to which the facility is used to recover and convert waste products into a salable or usable commodity.

No waste products are recovered or converted into a salable or usable commodity.

2) The estimated annual percent return on the investment in the facility.

There is no return on investment.

3) The alternative methods, equipment and costs for achieving the same pollution control objective.

The alternative chosen is an acceptable alternative for storing and preventing a release of hazardous waste materials into the environment.

4) Any related savings or increase in costs which occur or may occur as a result of the installation of the facility.

None.

5. Summation

a. The facility was constructed in accordance with all regulatory deadlines.

b. The facility is eligible for final tax credit certification in that the sole purpose of the facility is to prevent, control and substantially reduce the quantity of hazardous materials that could potentially be released into the environment. This prevention and or control and reduction is accomplished by the use of a containment facility that effectively reduces the risk of release of waste materials into the environment.

c. The facility complies with applicable statutes, rules and permit conditions.

d. The portion of the facility cost that is properly allocable to pollution control is 100%.

6. Director's Recommendation

Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of $14,803.00 with 100% allocated to pollution control be issued for the facility claimed in Tax Credit Application No. TC 4424.

Gary Calaba, gjc
TC4422
(503) 229-6534
March 4, 1996

Application No. TC-4524

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

---

1. Applicant

Truax Harris Energy Co.
P O Box 607
Wilsonville, OR 97070

The applicant owns and operates a cardlock station at 1750 Hawthorne St., (former address was 3411 Market St. NE at same location), Salem, OR 97301, Facility ID No. 6438.

Application was made for a tax credit for a water pollution control facility involving underground storage tanks. The application also included related air quality Stage I vapor recovery equipment.

2. Description of Claimed Facility

The claimed pollution control facilities described in this application are four doublewall brine-filled fiberglass tanks and doublewall piping, spill containment basins, turbine leak detectors, sumps, oil/water separator, automatic shutoff valves and Stage I vapor recovery equipment.

Claimed facility cost $226,545
(Accountant's certification was provided)

The Department concludes that the eligible facility cost for the project is $215,553. This represents a difference of $10,992 from the applicant's claimed cost of $226,545 due to:

(1) a determination that the cost of a tank gauge system ($10,513) and overfill alarm ($223) are not eligible because they replaced the same type of equipment for which a tax credit certificate was issued in 1990 pursuant to Oregon Administrative Rules 340-16-025(3)(g)(A).

(2) a determination that the cost of the monitoring wells claimed by the applicant ($256) is not eligible because they do not qualify as leak detection and, therefore, do not meet the definition of a pollution control facility in ORS 468.155.

3. Procedural Requirements

The facility is governed by ORS 468.150 through 468.190, and by OAR Chapter 340, Division 16.

The facility was substantially completed on September 1, 1995 and placed into operation on September 1, 1995. The application for certification was submitted to the Department on September 20, 1995, and was considered to be complete and filed on March 4, 1996, within two years of the completion date of the project.

4. Evaluation of Application

a. The facility is eligible because the principal purpose of the facility is to comply with underground storage tank requirements imposed by the federal Environmental Protection Agency to prevent pollution of soil, water and air. This is accomplished by preventing releases into soil, water or air. The facility qualifies as a "pollution control facility", defined in OAR 340-16-025(2)(g): "Installation or construction of facilities which will be used to detect, deter or prevent spills or unauthorized releases."

Prior to the installation of pollution control, the facility consisted of five steel tanks and piping with no corrosion protection and no spill and overfill prevention, with a tank gauge system for leak detection.

To respond to Underground Storage Tank requirements under OAR 340-Division 150, the applicant installed:

1) For corrosion protection - Doublewall fiberglass tanks and piping.

2) For spill and overfill prevention - Spill containment basins, sumps, automatic shutoff valves and an oil/water separator.

3) For leak detection - Turbine leak detectors.

In addition, the following equipment was introduced to reduce air quality emissions

1) For VOC reduction - Stage I vapor recovery equipment.

Based on information currently available, the applicant is in compliance with all applicable DEQ regulations in that these tanks are permitted and fee payments are current.

b. Eligible Cost Findings

In determining the percent of the eligible pollution control facility cost allocable to pollution control, the following factors from ORS 468.190 have been considered and analyzed as indicated:

1) The extent to which the facility is used to recover and convert waste products into a salable or usable commodity.

The equipment does not recover or convert waste products into a salable or usable commodity.

2) The estimated annual percent return on the investment in the facility.

There is no annual percent return on investment as the applicant claims no gross annual income from the facility.

3) The alternative methods, equipment and costs for achieving the same pollution control objective.

The applicant considered the methods chosen to be the most cost effective. The methods chosen are acceptable for meeting the requirements of federal regulations.

4) Any related savings or increase in costs which occur or may occur as a result of the installation of the facility.

The applicant claims no savings or increase in costs as a result of the installation.

5) Any other factors which are relevant in establishing the portion of the actual cost of the facility properly allocable to pollution control.

There are no other factors to consider in establishing the actual cost of the facility properly allocable to prevention, control of reduction of pollution.

The actual cost of the facility properly allocable to pollution control is determined by using these factors as displayed in the following table:

	Eligible Facility Cost	Percent Allocable	Amount Allocable
Corrosion Protection:			
Doublewall fiberglass tanks and piping	$49,058	63% (1)	$30,907
Spill & Overfill Prevention:			
Spill containment basins	851	100	851
Oil/water separator	2,461	100	2,461
Automatic shutoff valves	848	100	848
Sumps	2,525	100	2,525
Leak Detection:			
Turbine leak detectors	1,534	100	1,534
VOC Reduction:			
Stage I vapor recovery	602	100	602
Labor and materials	157,674	100	157,674
Total	$215,553	92%	$197,402

(1) The Department has determined the percent allocable on the cost of a corrosion protected tank and piping system by using a formula based on the difference in cost between the protected tank and piping system and an equivalent bare steel system as a percent of the protected system. Applying this formula to the costs presented by the applicant, where the protected system cost is $49,058 and the bare steel system is $17,987, the resulting portion of the eligible tank and piping cost allocable to pollution control is 63%.

5. Summation

a. The facility was constructed in accordance with all regulatory requirements according to signed statements made by the installation service provider and/or owner.

b. The facility is eligible for tax credit certification in that the principal purpose of the claimed facility is to comply with requirements imposed by the federal Environmental Protection Agency to prevent pollution of soil, water and air.

This is accomplished by preventing releases in soil, water or air. The facility qualifies as a "pollution control facility" defined in OAR 340-16-025(2)(g): "Installation or construction of facilities which will be used to detect, deter or prevent spills or unauthorized releases."

c. The facility complies with DEQ statutes and rules in that the appropriate compliance documents relating to the project have been submitted.

d. The portion of the facility cost that is properly allocable to pollution control is 92%.

6. Director's Recommendation

Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of $215,553 with 92% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4524.

Barbara J. Anderson
(503) 229-5870
March 4, 1996

Application No. TC-4538

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

---

1. Applicant

Robert W. Hays/Michael J. Moran
P O Box 1220
Medford, OR 97501

The applicant owns and operates a retail gas station at 2500 E. Main St., Cottage Grove, OR 97424, facility ID No. 3572.

Application was made for a tax credit for a water pollution control facility involving underground storage tanks replaced with aboveground storage tanks.

2. Description of Claimed Facility

The claimed pollution control facilities described in this application are epoxy lining in four aboveground storage tanks, epoxy lined secondary containment dike, doublewall flexible plastic piping, spill containment basins/sumps and tank gauge system.

Claimed facility cost $59,853
(Accountant's certification was provided)

3. Procedural Requirements

The facility is governed by ORS 468.150 through 468.190, and by OAR Chapter 340, Division 16.

The facility was substantially completed on May 1, 1994 and placed into operation on May 1, 1994. The application for certification was submitted to the Department on October 12, 1995, and was considered to be complete and filed on March 4, 1996, within two years of the completion date of the project.

4. Evaluation of Application

a. The facility is eligible because the sole purpose of the facility is to prevent pollution of soil, water and air. This is accomplished by preventing releases into soil, water or air. The facility qualifies as a "pollution control facility", defined in OAR 340-16-025(2)(g): "Installation or construction of facilities which will be used to detect, deter or prevent spills or unauthorized releases."

Prior to the installation of pollution control, the facility consisted of three steel underground storage tanks and piping with no corrosion protection, spill and overfill prevention or leak detection.

To respond to Underground Storage Tank requirements under OAR 340-Division 150, the applicant installed an aboveground tank system with:

1) Epoxy lining in four steel aboveground tanks and doublewall flexible plastic piping.

2) Epoxy lined containment dike, spill containment basins/sumps.

3) A tank gauge system for leak detection.

Based on information currently available, the applicant is in compliance with applicable DEQ regulations in that compliance documentation related to the project has been provided and fees are current.

The Department concludes that the costs claimed by the applicant ($59,853) are eligible pursuant to the definition of a pollution control facility in ORS 468.155.

b. Eligible Cost Findings

In determining the percent of the eligible pollution control facility cost allocable to pollution control, the following factors from ORS 468.190 have been considered and analyzed as indicated:

1) The extent to which the facility is used to recover and convert waste products into a salable or usable commodity.

The equipment does not recover or convert waste products into a salable or usable commodity.

2) The estimated annual percent return on the investment in the facility.

There is no annual percent return on investment as the applicant claims no gross annual income from the facility.

3) The alternative methods, equipment and costs for achieving the same pollution control objective.

The applicant considered the methods chosen to be the most cost effective. The methods chosen are acceptable for meeting the requirements of federal regulations.

4) Any related savings or increase in costs which occur or may occur as a result of the installation of the facility.

The applicant claims no savings or increase in costs as a result of the installation.

5) Any other factors which are relevant in establishing the portion of the actual cost of the facility properly allocable to pollution control.

There are no other factors to consider in establishing the actual cost of the facility properly allocable to prevention, control of reduction of pollution.

The actual cost of the facility properly allocable to pollution control is determined by using these factors as displayed in the following table:

	Eligible Facility Cost	Percent Allocable	Amount Allocable
Doublewall flexible plastic piping	$ 8,189	92% (1)	$ 7,534
Epoxy lining in four aboveground tanks	18,812	100	18,812
Spill basins/sumps	1,726	100	1,726
Tank gauge system	3,850	90 (2)	3,465
Labor and materials	27,276	100	27,276
Total	$59,853	98%	$58,813

(1) The Department has determined the percent allocable on the cost of a corrosion protected piping system by using a formula based on the difference in cost between the protected piping system and an equivalent bare steel system as a percent of the protected system. Applying this formula to the costs presented by the applicant, where the protected system cost is $8,189 and the bare steel system is $656, the resulting portion of the eligible piping cost allocable to pollution control is 92%.

(2) The applicant's cost for a tank gauge system is reduced to 90% of cost based on a determination by the Department that this is the portion properly allocable to pollution control since the device can serve other purposes, for example, inventory control.

5. Summation

a. The facility was constructed in accordance with all regulatory requirements according to information provided by the applicant.

b. The facility is eligible for tax credit certification in that the sole purpose of the claimed facility is to prevent pollution of soil, water and air. This is accomplished by preventing releases in soil, water or air. The facility qualifies as a "pollution control facility" defined in OAR 340-16-025(2)(g): "Installation or construction of facilities which will be used to detect, deter or prevent spills or unauthorized releases."

c. The facility complies with DEQ statutes and rules in that the appropriate compliance documents relating to the project have been submitted.

d. The portion of the facility cost that is properly allocable to pollution control is 98%.

6. Director's Recommendation

Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of $59,853 with 98% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4538.

Barbara J. Anderson
(503) 229-5870
March 4, 1996

Application No. TC-4551

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

---

1. Applicant

Blackman's 4-Way Grocery
12704 S Hwy 211
Molalla, OR 97038

The applicant owns and operates a retail gas station at 12704 S. Hwy 211, Molalla, OR 97038, Facility ID No. 1282.

Application was made for a tax credit for a water pollution control facility involving underground storage tanks. The application also included related air quality Stage I and II vapor recovery equipment.

2. Description of Claimed Facility

The claimed pollution control facilities described in this application are three doublewall fiberglass tanks (one tank is split) and doublewall fiberglass piping, spill containment basins, tank gauge system, turbine leak detectors, monitoring wells, sumps, automatic shutoff valve and Stage I and II vapor recovery equipment.

Claimed facility cost $137,633
(Accountant's certification was provided)

3. Procedural Requirements

The facility is governed by ORS 468.150 through 468.190, and by OAR Chapter 340, Division 16.

The facility was substantially completed on September 1, 1994 and placed into operation on September 1, 1994. The application for certification was submitted to the Department on November 13, 1995, and was considered to be complete and filed on March 4, 1996, within two years of the completion date of the project.

4. Evaluation of Application

a. The facility is eligible because the principal purpose of the facility is to comply with underground storage tank requirements imposed by the federal Environmental Protection Agency to prevent pollution of soil, water and air. This is accomplished by preventing releases into soil, water or air. The facility qualifies as a "pollution control facility", defined in OAR 340-16-025(2)(g): "Installation or construction of facilities which will be used to detect, deter or prevent spills or unauthorized releases."

Prior to the installation of pollution control, the facility consisted of five steel tanks and piping with no corrosion protection and no spill and overfill prevention.

To respond to Underground Storage Tank requirements under OAR 340-Division 150, the applicant installed:

1) For corrosion protection - Doublewall fiberglass tanks and piping.

2) For spill and overfill prevention - Spill containment basins, sumps, automatic shutoff valve and overfill alarm.

3) For leak detection - Tank gauge system, turbine leak detectors and monitoring wells.

In addition, the following equipment was introduced to reduce air quality emissions

1) For VOC reduction - Stage I and II vapor recovery equipment.

Based on information currently available, the applicant is in compliance with all applicable DEQ regulations in that these tanks are permitted and fee payments are current.

The Department concludes that the costs claimed by the applicant ($137,633) are eligible pursuant to the definition of a pollution control facility in ORS 468.155.

b. Eligible Cost Findings

In determining the percent of the eligible pollution control facility cost allocable to pollution control, the following factors from ORS 468.190 have been considered and analyzed as indicated:

1) The extent to which the facility is used to recover and convert waste products into a salable or usable commodity.

The equipment does not recover or convert waste products into a salable or usable commodity.

2) The estimated annual percent return on the investment in the facility.

There is no annual percent return on investment as the applicant claims no gross annual income from the facility.

3) The alternative methods, equipment and costs for achieving the same pollution control objective.

The applicant considered the methods used to be preferred based on contractor recommendation. The methods chosen are acceptable for meeting the requirements of federal regulations.

4) Any related savings or increase in costs which occur or may occur as a result of the installation of the facility.

The applicant claims no savings or increase in costs as a result of the installation.

5) Any other factors which are relevant in establishing the portion of the actual cost of the facility properly allocable to pollution control.

There are no other factors to consider in establishing the actual cost of the facility properly allocable to prevention, control of reduction of pollution.

The actual cost of the facility properly allocable to pollution control is determined by using these factors as displayed in the following table:

	Eligible Facility Cost	Percent Allocable	Amount Allocable
Corrosion Protection:			
Doublewall fiberglass tanks and piping	$40,305	59% (1)	$23,780
Spill & Overfill Prevention:			
Spill containment basins	764	100	764
Automatic shutoff valve	269	100	269
Sumps	2,027	100	2,027
Leak Detection:			
Tank gauge w/alarm	10,307	90 (2)	9,276
Turbine leak detectors	1,119	100	1,119
Monitoring wells	887	100	887
VOC Reduction:			
Stage I vapor recovery	903	100	903
Stage II vapor recovery	12,681	100	12,681
Labor and materials	68,371	100	68,371
Total	$137,633	87%	$120,077

(1) The Department has determined the percent allocable on the cost of a corrosion protected tank and piping system by using a formula based on the difference in cost between the protected tank and piping system and an equivalent bare steel system as a percent of the protected system. Applying this formula to the costs presented by the applicant, where the protected system cost is $40,305 and the bare steel system is $16,710, the resulting portion of the eligible tank and piping cost allocable to pollution control is 59%.

(2) The applicant's cost for a tank gauge system is reduced to 90% of cost based on a determination by the Department that this is the portion properly allocable to pollution control since the device can serve other purposes, for example, inventory control.

5. Summation

a. The facility was constructed in accordance with all regulatory requirements according to signed statements made by the installation service provider and/or owner.

b. The facility is eligible for tax credit certification in that the principal purpose of the claimed facility is to comply with requirements imposed by the federal Environmental Protection Agency to prevent pollution of soil, water and air. This is accomplished by preventing releases in soil, water or air. The facility qualifies as a "pollution control facility" defined in OAR 340-16-025(2)(g): "Installation or construction of facilities which will be used to detect, deter or prevent spills or unauthorized releases."

c. The facility complies with DEQ statutes and rules in that the appropriate compliance documents relating to the project have been submitted.

d. The portion of the facility cost that is properly allocable to pollution control is 87%.

6. Director's Recommendation

Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of $137,633 with 87% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4551.

Barbara J. Anderson
(503) 229-5870
March 4, 1996

Environmental Quality Commission

☐ Rule Adoption Item
☒ Action Item
☐ Information Item

Agenda Item C
April 12, 1996 Meeting

Title:

National Marine Fisheries Service Request for a Waiver to the Total Dissolved Gas Standard

Summary:

At its meeting of February 23, 1996 the Commission deferred a decision on the waiver request from the National Marine Fisheries Service to the State's total dissolved gas standard to enable water to be spilled over hydroelectric projects on the Columbia River to assist outmigrating threatened and endangered Snake River salmon smolts.

At that meeting, the Commission requested that staff return at its next meeting with a review of the full National Marine Fisheries Service's Expert Gas Panel Report, and that staff develop wording for the Commission to consider as a condition for its approval of the waiver that would require an open public review of the impact of dissolved gas on fish.

At its last meeting, the Commission did approve spill over Bonneville Dam for the period March 14, 1996 to March 23, 1996 to assist Spring Creek Hatchery salmon smolts. Staff have provided a summary of that spill for the Commission's information.

Department Recommendation:

The Department recommends that the Commission make findings and approve the waiver to the total dissolved gas standard for the Columbia River for the period April 12, 1996 to August 31, 1996 to enable spill over dams to assist out-migrating salmonid smolts subject to the conditions contained in the staff report.

Report Author | Division Administrator | Director

Accommodations for disabilities are available upon request by contacting the Public Affairs Office at (503)229-5317(voice)/(503)229-6993(TDD).

State of Oregon
Department of Environmental Quality Memorandum

Date: April 12, 1996

To: Environmental Quality Commission

From: Langdon Marsh, Director

Subject: Agenda Item C, April 12, 1996, EQC Meeting

Statement of Purpose

At its meeting on February 23, 1996, the Commission deferred a decision on the application from the National Marine Fisheries Service's (NMFS) request for a waiver to the state's total dissolved gas standard to enable water to be spilled over Columbia River hydroelectric projects to assist outmigrating threatened and endangered Snake River salmon smolts. The Commission requested that staff return at the next meeting with a review of the NMFS Expert Gas panel Report, and that staff develop a condition that could be attached to a Commission approval that would enable an open public review of the impact of total dissolved gas on fish, and the relative merits of spill.

Prior to providing these, staff have briefly reviewed the results of the Bonneville Spill approved by the Commission on February 23, 1996 for the Spring Creek Hatchery release.

Background

Spring Creek Hatchery Spill at Bonneville Dam

While the United States Fish and Wildlife Service (USFWS) requested a waiver to the total dissolved gas standard to begin spilling at Bonneville Dam on March 14, 1996, spill at the dam has been occurring since the early February flood. This spill, subsequently referred to as involuntary spill (to distinguish it from the voluntary spill requested by the fisheries agencies for assisting fish) resulted in dissolved gas levels in the Bonneville forebay above 115 percent. The highest forebay measurement occurred on March 14, 1996 and registered 121.3 percent. As a result, tailrace gas levels were also high, frequently exceeding the 120 percent twelve hour average established by the Commission.

Biological monitoring of out-migrating smolts, returning adults and resident populations was also undertaken by NMFS, the National Biological Service (NBS) and Washington Department of Fish and Wildlife (WDFW). Fall Chinook salmon at the hatchery were examined prior to their release. Of those examined two showed signs of gas bubble trauma, one with five percent occlusion and one with 25 percent. Few signs of gas bubble disease were detected in sub-yearling Chinook salmon released from the Spring Creek hatchery. Of 505 fish examined, three (or about 0.6 percent) exhibited signs of gas bubble trauma. Coho and yearling fall Chinook, largescale suckers

and whitefish that were collected showed higher incidences of gas bubble disease. External signs were detected in 20 out of 87 yearling fall Chinook (23 percent) and eight out of 38 Coho (21 percent). Six out of 109 largescale suckers (5.5 percent), one out of six mountain whitefish (17 percent) and one out of 44 stickleback (two percent). One juvenile steelhead and one juvenile sockeye were examined, but neither showed any signs of gas bubble trauma. Other resident fishes collected and examined included northern squawfish, carp, walleye, flounder, peamouth, killifish, redside shiner, pumpkinseed, smallmouth bass, and yellow perch. None of these fish exhibited signs of gas bubble trauma.

Coho and yearling fall Chinook are not usually caught in the river at this time, and NMFS and USFWS surmise that these fish may have been released by hatcheries under emergency conditions in February and they have been residing in the river since that time. If that is so, these fish may have been exposed to elevated dissolved gas levels since that time.

NMFS Expert Gas Panel Report

At its last meeting, the Commission requested staff to review the full NMFS Expert Gas Panel Report. Due to the late receipt of this report, staff's review is necessarily cursory. The Chair of the Panel, Dr. Chuck Coutant is here today, and is available to answer questions if the Commission wishes. A copy of the "Purpose, Conclusions, and Recommendations" portion of the report is attached at Appendix A.

Terms of Reference

The Expert Panel on Gas Bubble Disease was asked to address three questions. These were:

1. Based on a review of 1995 monitoring program and results, does the proposed 1996 monitoring program provide appropriate data to protect migrating juvenile and adult salmonids from GBD?

2. Do the "critical assumptions" identified by the Biological Monitoring Inspection Team of the GBD Technical Work Group capture the major uncertainties associated with the monitoring program? Are some assumptions more "critical" than others?

3. Do the proposed research approaches adequately address the critical uncertainties? Are there additional experimental strategies that should be considered? Which research approaches are the highest priority; i.e., which address the most critical of the assumptions?

The Panel's report reflects two views, a majority and a minority view.

Monitoring

The majority of the panel supported monitoring signs of gas bubble disease as a useful indicator of potential fish losses. The minority view was that no improvement in monitoring at projects will assist in determining the health of fish in reservoirs, and that a low incidence of signs gives a false sense of security.

The Panel agreed that the current smolt monitoring at dam bypasses and adult monitoring at selected dams may not provide sufficient data to indicate negative effects and therefore be useful for protecting migrating juveniles and adults from gas bubble disease. In particular, the Panel expressed the view that changes in bubbles as fish traverse the bypass system could skew the monitoring results toward a low number of signs. These problems could be addressed by direct in-river sampling, although the Panel believed that this too contains many untested assumptions, and that the additional handling of fish is arduous to migrants.

The Panel concluded that the proposed 1996 monitoring plan will be insufficient to attain NMFS's first goal of providing data necessary to protect aquatic biota in the Columbia and Snake rivers from the effects of gas bubble disease. A majority of Panel members recommend continuation of the 1996 smolt monitoring program for 1996 as proposed, subject to modifications, because uncertainties associated with bypass monitoring will not be able to be resolved in time for the 1996 migration season. The modifications proposed include research to test critical assumptions and an expanded parallel program of in-river sampling for signs of bubbles in fish. A minority of the Panel believes that physical signs of gas bubble disease in fish, whether collected from the bypass system or in-river are an unreliable index of survival because signs of bubbles and mortality have not been correlated, especially in complex circumstances such as multiple, intermittent exposure. The Panel does not believe the gas levels identified in the NMFS Biological Opinion (115 percent in the forebays and 120 percent in the tailrace) should be exceeded, although some members believe the biological safety of these levels has not been substantiated.

Research

The following is the Panel's ranking of the critical assumptions/uncertainties in the monitoring program:

1. Relationships between bubbles in fins, gill, lateral line, and smolt/adult mortality are known;
2. Clinical signs do not change during collection and examination of fish;
3. Signs in sampled fish are representative of the river site and whole day;
4. Samples are at representative locations, including high-risk locations;
5. Sample size is statistically adequate for required confidence limits;
6. Key signs of gas bubble disease and their relative significance are known.

To these the panel added a seventh critical assumption, which was not ranked relative to the other six. This assumption is:

7. A 15 percent incidence of signs of gas bubble trauma is the level that can be tolerated by juvenile migrant populations.

The Panel believes that without testing of these critical assumptions the monitoring program used in 1994-95 and proposed for 1996 is of questionable value for protecting the resource. NMFS has proposed a research program that includes testing these critical assumptions. The Panel confirmed that these research proposals were appropriate and confined itself to reordering research priorities.

Panel Recommendations

Most Panel members recommend continuation of the monitoring program for gas bubble disease signs in fish collected in dam bypasses and in-river for continuity of data and so that the critical assumptions can be evaluated, subject to modifications. These are detailed in Attachment A at page 4. The panel recommends that in-river sampling should be emphasized, and that measures for monitoring in-river fish survival under elevated gas levels should be developed and used. Reach survival estimates should also be incorporated into the 1996 monitoring program.

The Panel recommends an integrated research program to test all of the critical assumptions/uncertainties with emphasis on those concerning the relationship between clinical signs of gas bubble disease and mortality and the validity of signs measured at fish bypasses in dams.

The Panel recommends that the research program proposed by NMFS be adopted and implemented.

Finally, the Panel expressed its frustration at the lack of time for deliberation and report preparation. It recommended that it be convened in the fall of 1996 to begin working on recommendations for the 1997 season, and that the Panel, prior to commencing its deliberations, should be presented with an unbiased review of the spill program including a thorough review of the policy and technical details of spill management.

The bulk of the Panel's report is a record of its deliberations and a copy of its last report. The following points are of note. The Panel acknowledged the low incidence of gas bubble signs in fish during the 1995 spill season. However, the Panel was concerned that the validity of the results may have been a function of the untested critical assumptions. The Panel noted that most,

but not all, of its recommendations for the 1995 spill season had been carried out. In particular, a complete and independent synthesis of both the 1994 and 1995 data still needs to be performed.

The measurement of gas bubbles in fins presented a problem. In 1995 all incidences of bubbles found in fins were classed as category one. The Panel wrestled with whether to go with a measurement system based purely on presence or absence of bubbles (effectively what happened in 1995), or to provide a finer scale of measurement. It opted for the latter. The Panel recognized the value of using 90X microscopes for examining gill lamallae, but did not develop a recommendation for its use in 1996.

The Panel, without endorsing Stave Cramer's results from PIT-tag data on in-river survival, agreed that this was valuable research and should be continued in 1996.

In deciding research priorities, the Panel identified the following ranking of questions:

1. What are the effects of passage through dam bypass systems on prevalence of GBD signs?
2. Are sampling designs and sites adequate for detecting mortality?
3. Do signs of GBD accurately reflect biological effects?
4. Are the protocols of clinical assessments effective in characterizing GBD?

For each question a series of research approaches was identified.

<u>An Open Public Process</u>

At its last meeting, the Commission expressed concern at the perceived lack of a public process in which the data generated by the monitoring program can be analyzed, disseminated, and in which broader questions surrounding spill and fish can be addressed. The Commission requested that staff develop a condition which would require these aspects to be addressed.

The Commission's concerns seem to fall into two main areas, and the Department believes these should be addressed separately. The Commission is seeking answers to large questions, such as;

1. Does spill benefit fish? and
2. How should the biological monitoring program be configured to detect harm to fish if/when it is occurring?

The Department believes there is a Board already established that would be well qualified to address these larger questions. This is the Independent Scientific Review Board established jointly by the Northwest Power Planning Council and NMFS to address questions related to salmon in the Northwest. Questions to be addressed to the Board need to be approved by the

respective Heads of NMFS in Seattle and the Chair of the Power Planning Council. Once approved, they are submitted to the Board for consideration. The Board meets with the questioner to frame the question in a sufficiently precise manner before deliberating on it. Inquiries by staff reveal that the broad questions that the Commission seeks to have addressed would be appropriately dealt with by the Board. Further, verbal assurances from NMFS and Power Planning Council staff indicate that the respective agencies would support the panel addressing these questions. The Board would be requested to report its findings to the Commission no later than February 1, 1997 in time for consideration of the 1997 waiver request. Staff of the Power Planning Council indicate that this would be a realistic timeframe for consideration of these questions, and reporting back. A list of the Independent Scientific Review Board members is attached at Appendix B. Dr. Coutant is a member of this Board and is available to provide background on it to the Commission.

The second concern raised by the Commission is access to the data generated by the physical and biological monitoring program. This is best addressed by the Department hiring a fish physiologist who can spend time with all the agencies conducting the physical and biological monitoring, and who can participate in in-river monitoring. This person could ensure that the data generated is analyzed for the Department and Commission, and also could report on the results of monitoring both in-season and following the end of the spill season.

Because the Department has no funding or authorization for such a position, resources need to be identified for this option to be addressed. One alternative could be for NMFS to request funding from Endangered Species Act funds for this position. NMFS has indicated that it would be willing to provide this, depending on who is to be hired into the position. Because many of the people involved in this issue are viewed with suspicion by those on the other side of the issue, the Department believes someone not currently involved in spill should be selected. Because this is a purely gathering, analyzing and reporting function, a recent graduate in fish biology or fish physiology would be able to perform this task.

The Department does not propose to cede its judgment to this person. Rather the appointee would report to Department staff who would then be able to focus on monitoring results, and would be able to report to the Commission on a regular basis during the spill season.

Additional Monitoring Requirements

After the last meeting, the Direct service Industries submitted a list of proposed monitoring requirements that it believed the Commission should include in its approval of any waiver to the standard. After reviewing the list, the Department recommends that the Commission include these in any approval it gives. NMFS has reviewed these requirements, and has assured the Department that they will be able to be incorporated into the monitoring program for 1996. The conditions are:

1. NMFS must provide written notice to the Department within 24 hours of any violations of the conditions of the variance. Such notice shall include actions proposed to reduce TDG levels or the reason(s) for no action.

2. TDG data and incidence of GBD signs in smolts and adults will be reported to the Department daily. Hourly TDG levels collected from the forebays and downstream locations of McNary, John Day, The Dalles, and Bonneville Dams will be reported to the Department daily. Incidence of GBD signs in smolts collected from McNary, John Day, and Bonneville Dams and adults collected at Bonneville and Lower Granite Dams will be reported the Department daily. Signs of GBD in smolts will be measured by using a variable (10X to 40X) dissecting scope. Unpaired fins, eyes, and lateral line will be examined for the presence of bubbles. Smolts will be monitored daily. Signs of GBD in adults will be measured using at least a 2.5X magnification device and examining fins, eyes, mouth, opercula, and body for bubbles. Adults will be monitored at Bonneville Dam three times per week and seven days a week at Lower Granite Dam.

3. The Commission will require that by January 15, 1997 NMFS provide a report to the Department with a draft of the report released for peer and public review no later than December 1, 1996. The report shall contain:

   (a) Statistical evaluation of the available PIT-tag data to determine week-by-week survival changes. Techniques should be used to detect differences between groups with small sample size or maximize the sample size to increase statistical reliability. The association between survival estimates and TDG, temperature, flow related effects, or other phenomena which could affect survivorship will be evaluated.

   (b) An empirical estimate of survival associated with spill.

   (c). Week-by-week estimates of the quantities of voluntary vs. involuntary spill. The factors causing the spill scenario shall be stated *i.e.* hydraulic capacity, turbine outages, lack of a power market, etc.

   (d) Survival estimates of transported vs. untransported fish at collector projects.

   (e) Survival and incidence of GBD data from net pens below Bonneville Dam. Care must be taken to avoid areas with excessive flow or elevation fluctuations or to engineer around such problems. Care must be taken to avoid size and species differences within net pens to reduce losses from predation.

(f) Incidence of GBD signs in adults and estimates of upstream spawning delays of returning adult salmonids from increased spill.

(g) Incidence of GBD signs in resident fish species collected from below Bonneville Dam. Sampling will occur once each week April 15 through August 31.

Incorporation of these conditions will ensure that the Department and Commission are provided with data at an early stage for next year's variation request.

Authority of the Commission with Respect to the Issue

The authority of the Commission to address this issue is contained in Oregon Administrative Rules - OAR 340-41-205, 445, 485, and 525 (2)(n). A copy of the rule is attached at Appendix C.

At its meeting of February 16, 1995, the Commission modified the Oregon Administrative Rules to enable it to modify the total dissolved gas standard for the Columbia River for the purpose of assisting juvenile in-river salmon migration.

If the Commission is to grant this variance, it is required to make four findings under the rules. These are:

(i) that failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;

(ii) that the modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;

(iii) that adequate data will exist to determine compliance with the standards; and

(iv) that biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.

The rule also allows the Commission to consider alternative modes of migration at its discretion.

Alternatives and Evaluation

There are four main methods of salmonid migration down the Columbia River. These are transportation, turbine passage, dam by-pass passage, and spill. In practice all four of these modes will be used in 1996 as they were in 1995. The fisheries agencies will continue to collect and transport between 75 and 80 percent of smolts. The remaining 20 to 25 percent of smolts will remain in-river and will proceed either through by-pass facilities at the dams or through turbines or over the spill way via a spill program.

Turbine mortalities have been estimated at between 10 and 15 percent, and the by-pass facilities at dams are imperfect at guiding all in-river smolts away from turbines. The spill program is designed to minimize mortalities for fish which are not guided away from turbines by the by-pass devices. Mortalities from spill are estimated at between 2 and 3 percent.

In relation to the four findings required to be made under the total dissolved gas rule, the following are supported by the petition:

(i) failure to act will result in more salmonid passage via hydroelectric dam turbines. Estimated mortalities from fish passing through turbines is between 10 and 15 percent. Fish passing over spillways as a result of spill experience 2 to 3 percent mortality. The Commission is, therefore able to make the first finding;

(ii) the balance of risk of impairment to fish due to elevated dissolved gas levels needs to be balanced against mortality of turbine passage. It is clear from the netpen mortalities at Ice Harbor in May and June 1995 that elevated dissolved gas levels do result in significant mortality. Dissolved gas levels experience at Ice Harbor in May and June 1995 are well above the range within which instream bioassays indicate mortalities will occur. Correspondence from Oregon Department of Fish and Wildlife (ODFW) and the Tribes in relation to last year's petition equated the mortality from turbines with elevated dissolved gas at around 120 percent, although this is considered a conservative estimate. Given the conservative nature of this estimate along with the data yielded by the netpen mortalities at Ice Harbor, the balance of the risk of impairment at the levels sought in the petition is tipped in favor of granting the variance;

(iii) NMFS has submitted a detailed physical monitoring plan which is the same as last year. Physical monitoring will occur at 37 sites in the mainstem Columbia, lower Snake and lower Clearwater Rivers in the forebays and tailraces of all spilling dams. The physical monitoring plan seeks to overcome the difficulties encountered last year with equipment failures and unreliable readings through rapid equipment repair including the use of

properly calibrated backup equipment, and weekly instrument verification. Hourly data will be posted electronically, as it was last year. Implementation of the physical monitoring plan will ensure that data will exist to determine compliance with the standards;

(iv) NMFS has submitted a detailed biological monitoring program which also mirrors that of last year. Significant differences are that resident invertebrates will not be monitored in 1996. The incidence of GBD in resident invertebrate populations was so low in previous years that no benefit is seen from continuing with it. Smolt monitoring will continue as it did last year with examination of smolts being undertaken with 10X to 40X dissecting microscopes. Signs of GBD will be sought on non-paired fins, eyes and lateral lines. The Expert Panel on Gas Bubble Disease suggests that it is unknown whether or not the proposed biological monitoring program will provide data to show that migratory and resident biological communities are being protected. This uncertainty arises from the untested critical assumptions that underpin the monitoring program. Notwithstanding this, the Expert Panel proposes that the monitoring program should be implemented. It is the best available monitoring at this stage, and provides the best possible information within the constraints noted by the Expert Panel. The Expert Panel did, however suggest modifications to the monitoring program that may ameliorate some of these shortcomings. These modifications should be incorporated into the monitoring program.

With these findings, the Commission is able to approve the variation to the total dissolved gas standard as sought by NMFS.

Alternative Commission Actions

The petition is such that the required findings are able to be made, and the waiver approved. Clearly, any level of action less than approval can also be undertaken by the Commission, including denying the petition or approving it with conditions.

With the uncertainty surrounding the biological monitoring program, it is critical that detailed in-season evaluation of monitoring data be undertaken to ensure that timely and appropriate actions are taken to mitigate harm to fish. It becomes even more critical for the protection of beneficial uses that this agency have a staff person assigned solely to total dissolved gas data collection and analysis.

Summary of Public Input Opportunity

Following receipt of the petition on January 16, 1996, the Department issued a public notice, advising receipt of the petition and inviting interested parties to submit either oral testimony at a

public hearing that was held at 1:00 p.m. on February 16, 1996 in room 3A at DEQ Headquarters, or in writing by 5:00 p.m. on February 16, 1996.

A summary of public comment and written submissions is attached at Appendix D.

The parties choosing to comment, either orally or in writing, are the same as last year. Generally, commercial fishing interests, environmental groups, tribes and state and Federal agencies support the granting of the variance, and representatives of industry oppose it.

The DSIs remain opposed to spill for salmonid in-river migration. They point to Cramer's conclusions that despite critical peer review, his conclusions of mortality increasing as gas levels increase has remained unchanged. The DSIs propose a series of options for the Commission. These include:

(i) denying the request;
(ii) conditioning any variation to the standard on demonstrable proof of benefit;
(iii) allowing only a partial increase such as 110 percent in the forebay and 115 percent in the tailrace;
(iv) limiting the number and/or duration of projects spilling;
(v) providing a safe haven from gas supersaturation at an intermediate project by limiting gas exposure and duration; or
(vi) conditioning approved gas levels on rigorous real-time monitoring data.

Proponents of the variance point to the success of the program in 1995, and to the role played by spill in a risk-spreading strategy for salmon recovery, in which spill plays an important part, but is by no means the only strategy to be employed for salmonid survival. Some tribal and sport fishing representatives sought levels of spill above those petitioned for by NMFS to improve fish passage efficiencies.

No additional public input opportunities were provided following the Commission's consideration of the petition at its February 23, 1996 meeting. Since that time, however, the Direct Service Industries have provided suggested modifications to the NMFS's proposed biological monitoring program for the 1996 spill season. The Department has evaluated these suggestions, and agrees that some of them merit inclusion in the NMFS monitoring program. NMFS concurs that it is able to carry these out.

Conclusions

In its original report, staff recommended that the Commission grant the waiver to the state's total dissolved gas standard subject to conditions. Staff continue to recommend that course of action,

but recommend additional conditions to address the Commission's concerns and the issues raised by the Expert Gas Bubble Disease Panel. These additional conditions would enable the Commission and Department to address specific questions of concern to the Northwest Power Planning Council/NMFS Independent Scientific Advisory Board, and would enable the Department to hire a fish biologist or fish physiologist to assist with data collection and analysis. In addition, the Department supports the Expert panel's recommendations on development of in-river sampling protocols. NMFS should be encouraged to continue the Expert Gas Panel or some other scientific body during the 1995 spill season to develop these measures. The Department also supports the Gas Panel's request for background presentations on spill management.

Intended Future Actions

Over the course of the past year Departmental officials have met with representatives from the Washington Department of Ecology, the state and federal fisheries agencies, tribes, and USACE. Staff believe the long term approach to this problem is for the Corps to physically and operationally modify the projects to enable spill for fish at agreed upon fish passage efficiencies while remaining within the total dissolved gas standard established by the states of Idaho, Washington and Oregon. The Corps is proceeding with a gas abatement study, an important component of which is a timetable for carrying out these modifications.

Staff believe there is a willingness on the part of all participants in this issue to participate in a Mutual Agreement and Order under which the Commission would grant a variance to the dissolved gas standard under strict and enforceable conditions, in return for which the Corps will undertake specified operational and structural modifications within a tightly defined timetable. Opportunity for modification of the conditions and timetable would be structured to accommodate new data or scientific conclusions.

Staff will continue participating in these discussions. Any proposed action should be subject to public scrutiny and input.

Department Recommendation

The Department recommends that the Commission grant this petition by adopting the findings contained in the Draft Order attached at Appendix F, subject to implementation of the physical and biological monitoring regime as detailed in the monitoring plan submitted by the National Marine Fisheries Service dated January 25, 1996, and:

(i) Approve a revised total dissolved gas standard for the Columbia River for the period from midnight on April 12, 1996 to midnight on August 31, 1996;

(ii) Approve a total dissolved gas standard for the Columbia River of a daily (12 highest hours) average of 115 percent as measured at established monitors at the forebay of the next dam downstream from the spilling dam during this time;

(iii) Approve a further modification of the total dissolved gas standard for the Columbia River to allow for a daily (12 highest hours) average of 120 percent as measured at established tailrace monitors below the spilling dams during this time;

(iv) Approve a cap on total dissolved gas for the Columbia River during the spill program of 125 percent, based on the highest two hours during the 12 highest hourly measurements per calendar day during this time; and

(v) Require that the Director halt the spill program if *either* 15 percent of the fish examined show signs of gas bubble disease in their non-paired fins, *or* five percent of the fish examined show signs of gas bubble trauma in their non-paired fins where more than 25 percent of the surface area of the fin is occluded by gas bubbles, whichever is the less;

(vi) Direct the Director to frame questions concerning the benefits of spill and the accompanying monitoring program for the Northwest Power Planning Council's Independent Scientific Advisory Board;

(vii) Require NMFS to provide funding for the Department to hire a fisheries biologist or fish physiologist to assist in collecting and analyzing data on total dissolved gas and its effect on beneficial uses;

(viii) Require that NMFS incorporate the modifications suggested by the Expert Panel on Gas Bubble Disease into its biological monitoring program;

(ix) Require NMFS to incorporate the following conditions into its program:

1. NMFS must provide written notice to the Department within 24 hours of any violations of the conditions in the variance. Such notice shall include actions proposed to reduce TDG levels or the reason(s) for no action;

2. TDG data and incidence of GBD signs in smolts and adults will be reported to the Department daily. Hourly TDG levels collected from the forebays and downstream locations of McNary, John Day, The Dalles, and Bonneville Dams will be reported to the Department daily. Incidence of GBD signs in smolts collected from McNary, John Day, and Bonneville Dams and adults collected at Bonneville and Lower Granite Dams will be reported the Department daily. Signs of GBD in smolts will be measured by

using a variable (10X to 40X) dissecting scope. Unpaired fins, eyes, and lateral line will be examined for the presence of bubbles. Smolts will be monitored daily. Signs of GBD in adults will be measured using at least a 2.5X magnification device and examining fins, eyes, mouth, opercula, and body for bubbles. Adults will be monitored at Bonneville Dam three times per week and seven days a week at Lower Granite Dam;

3. The Commission requires that by January 15, 1997 NMFS provide a report to the Department with a draft of the report released for peer and public review no later than December 1, 1996. The report shall contain:

   (a) Statistical evaluation of the available PIT-tag data to determine week-by-week survival changes. Techniques should be used to detect differences between groups with small sample size or maximize the sample size to increase statistical reliability. The association between survival estimates and TDG, temperature, flow related effects, or other phenomena which could affect survivorship will be evaluated;

   (b) An empirical estimate of survival associated with spill;

   (c) Week-by-week estimates of the quantities of voluntary vs. involuntary spill. The factors causing the spill scenario shall be stated i.e. hydraulic capacity, turbine outages, lack of a power market, etc.;

   (d) Survival estimates of transported vs. untransported fish at collector projects;

   (e) Survival and incidence of GBD data from net pens below Bonneville Dam. Care must be taken to avoid areas with excessive flow or elevation fluctuations or to engineer around such problems. Care must be taken to avoid size and species differences within net pens to reduce losses from predation;

   (f) Incidence of GBD signs in adults and estimates of upstream spawning delays of returning adult salmonids from increased spill;

   (g) Incidence of GBD signs in resident fish species collected from below Bonneville Dam. Sampling will occur once each week April 15 through August 31.

Attachments

A. Purpose, Conclusions and recommendations of the NMFS's Expert Panel on Gas Bubble Disease
B. Membership list of the Northwest Power Planning Council/NMFS Independent Scientific Advisory Board
C. OAR 340-41-205, 445, 485, and 525 (2)(n) relating to the total dissolved gas standard
D. Summary of public comment and written submissions
E. Map of Columbia and Snake Rivers showing hydroelectric dam locations
F. Draft Commission Order

Reference Documents (available upon request)

1. Staff Report on Total Dissolved Gas dated February 23, 1996
2. National Research Council (1995) *Upstream: Salmon and Society in the Pacific Northwest*, National Academy Press, Washington D.C. (Prepublication copy)
3. National Marine Fisheries Service (1995) *Proposed Recovery Plan for Snake River Salmon*, United States Department of Commerce, Washington D.C.
4. Panel on Gas Bubble Disease (1996) *Summary Report*, Northwest Fisheries Science Center, Seattle, WA

Approved:

Section: Russell Harding

Division: Michael Downs

Report Prepared By: Russell Harding

Phone: 229-5284

Date Prepared: April 9, 1996

PURPOSE, CONCLUSIONS, AND RECOMMENDATIONS

This report is a summary of the February 1-3, 1996 meeting of the National Marine Fisheries Service (NMFS) expert Panel on Gas Bubble Disease. This meeting was the third in a series of workshops convened by NMFS to review monitoring and research focused on determining the prevalence and effects of gas bubble disease--also termed gas bubble trauma--among Columbia and Snake river salmonids. The purpose of the meeting was to develop a set of recommendations related to gas bubble disease monitoring and research proposed for 1996 in the Columbia and Snake rivers. The Panel was to provide NMFS and other interested groups with recommendations that address the agency's two major goals for gas bubble disease monitoring and research:

- To provide data necessary to protect aquatic biota in the Columbia and Snake rivers from the effects of gas bubble disease

- To validate and improve gas bubble disease monitoring on the Columbia and Snake rivers

These goals were framed as *Terms of Reference* for the proceedings. The *Terms of Reference* (Appendix A) posed three questions, quoted below, designed to shape discussion around the needs of scientific inquiry.

This report is not as polished and comprehensive as some might wish. Although the fundamental scientific rationale for most sections of the report are well developed, others are less well developed because of time constraints and lack of data and data syntheses. Despite the constraints, Panel members have sought to provide recommendations which aid in the resolution of the gas bubble disease issue in the basin.

The report has been reviewed by the Panel members and all agree that it reflects their majority or minority views fairly. The majority of the Panel members endorses the report as an accurate reflection of the status of science regarding monitoring and research for effects of gas bubble disease (trauma). Some Panel members do not agree with particular statements and they reserve the right to express these differences of opinion in other forums. This full report supersedes a draft executive summary that was released to the Oregon Environmental Quality Commission on February 23, 1996.

Monitoring

The Panel was asked: "Based on review of 1995 monitoring program and results, does the proposed 1996 monitoring program provide appropriate data to protect migrating juvenile and adult salmonids from gas bubble disease?" The Panel reviewed the 1995 monitoring program and the Panel's recommendations from its previous meetings. Most of the Panel's 1995 recommendations for monitoring were heeded, and the report discusses those that were not.

The panelists disagreed regarding the value of monitoring clinical signs of gas bubble disease for evaluating juvenile migrant survival. The majority of members supported monitoring of

gas bubble disease signs as a useful indicator of potentially serious fish losses, subject to verification of critical assumptions underlying sampling and examination. The minority view held that no amount of improvement in monitoring signs of gas bubble disease (especially at fish bypasses in dams) will yield information on the health of fish in reservoirs, and that a low incidence of signs gives a false sense of security. The Panel agreed that measurements of survival itself under various conditions of total dissolved gas saturation would be best and are most directly related to protection of aquatic biota. There are a number of reasons why the current smolt monitoring program at dam bypasses and adult monitoring at selected dams may not provide sufficient data to indicate negative effects and therefore be useful to protect migrating juvenile and adult salmonids from gas bubble disease. Bias may occur if there is loss or gain of bubbles in tissues as fish traverse the bypass system or mortality of fish affected by gas bubble disease in reservoirs before reaching bypasses in dams (direct mortality or through predation or action of pathogens). These deficiencies, if they occur, could skew the results toward a low number of signs, and these results alone may not provide indications of effects sufficient to protect salmonids. Some of these problems could be alleviated by monitoring fish collected directly from the river, although in-river sampling also has many untested assumptions, is arduous, and would involve additional handling of migrants.

The majority of Panel members concluded that the smolt monitoring program of 1994-1995 in fish bypasses at dams should continue until critical uncertainties are resolved or better indicators of the effects of gas supersaturation are found. Research may lead to improvements in the monitoring program and include reliable in-river sampling protocols and survival estimates. Continuation (with some modification) in 1996 could provide a useful multi-year index of the presence or absence of gas bubble disease if identified critical assumptions about bypass-sampled fish are tested and validated through a comprehensive and coordinated research program. The incidence of fish with signs of gas bubble disease at fish bypasses might be a valuable index or indicator of probable fish losses if the incidence of signs increases from the current low level. The Panel supports a larger emphasis on in-river sampling and monitoring of survival, even if difficult.

The Panel concludes that the proposed 1996 monitoring plan alone will be insufficient to attain NMFS's first goal. A majority of Panel members recommends continuation of the monitoring program in fish bypasses in 1996, with important modifications, because the uncertainties associated with the smolt bypass monitoring will not be resolved in time for the 1996 migration. Modifications are recommended below, and include research to test critical assumptions and an expanded parallel program of in-river sampling for signs of bubbles in fish. A minority of Panel members believed that signs in fish taken from the river or the bypass systems would still be unreliable as an index of survival (because signs and mortality have not been clearly related quantitatively, especially in complex circumstances of intermittent exposures). The Panel believes that there is not sufficient information to justify the safety of exceeding the 1995 guidelines for total dissolved gas saturation specified in the NMFS Biological Opinion (115% in forebays and 120% in tailwaters). Some members believe that the biological safety of these levels is insufficiently substantiated.

Research

The Panel was asked two research questions:

(1) "Do the critical assumptions identified by the Biological Monitoring Inspection Team of the Gas Bubble Disease Technical Work Group capture the major uncertainties associated with the monitoring program? Are some assumptions more critical than others?"

(2) "Do the proposed research approaches adequately address the critical uncertainties? Are there additional experimental strategies that should be considered? Which research approaches are the highest priority; i.e., which address the most critical of the assumptions?" (The research approaches are those proposed in the preliminary NMFS gas bubble disease research priorities document, cited in Appendix E.)

The Panel concluded that the assumptions/uncertainties in the monitoring program identified by the Biological Monitoring Inspection Team of the Gas Bubble Disease Technical Work Group (an advisory body of implementing agencies) are appropriate and should be verified. The Panel ranked the assumptions as follows, but viewed all of them as essential.

1. Relationships between bubbles in fins, gill, lateral line, and smolt/adult mortality are known;
2. Clinical signs do not change during collection and examination of fish;
3. Signs in sampled fish are representative of the river site and whole day;
4. Samples are at representative locations, including high-risk locations;
5. Sample size is statistically adequate for required confidence limits;
6. Key signs of gas bubble disease and their relative significance are known.

Because 15% incidence of signs is used as a biological criterion for reevaluating a specific spill action, the Panel added another critical assumption: that this level of incidence of gas bubble disease signs can be tolerated by the juvenile migrant populations. This addition was not ranked among the other six.

Without substantiation of these critical assumptions, the monitoring program of 1994-1996 is of questionable value for protection of the resource. NMFS has proposed a research program that includes testing all of the critical assumptions. The proposed research approaches under several topics are designed to give multi-faceted sets of approaches that can provide weight of evidence for each topic whereas any single approach would be insufficient. The Panel believes that the proposed research approaches are appropriate and it would eliminate only a few items from high priority. Emphasis should be placed on research that (1) tests the validity of the 1994-1996 monitoring programs at Smolt Monitoring Program sites in fish bypasses at dams, and (2) helps estimate in-river survival of migrants.

The Panel recognized the importance of spill as the context for its deliberations but did not make judgments about spill management. It reiterated its belief that the scientific information to be obtained through these monitoring and research programs will be essential to an

integrated risk-benefit assessment of spill and the policy decisions that must be made regarding spill management.

Major Recommendations

1. Most Panel members recommend continuation of the monitoring program for gas bubble disease signs in fish collected in dam bypasses and in the river, with some modifications, for purposes of continuity and so that major assumptions can be tested. These modifications are:

* addition of resolution to scoring of fin bubbles;
* use of in-river sampling sites such as below Ice Harbor Dam, at Vernita, and below Bonneville Dam, with selection being determined by distribution of elevated gas saturation in the river;
* increased analysis of correlations between signs, total dissolved gas concentrations, and mortality;
* maintenance of the consistency of measurements;
* sampling at dams over a minimum of 16 hours per day, with periodic checks at other times;
* increase in sample size of fish of Snake River origin captured at McNary Dam for analysis;
* determination of gas levels in gatewells and bypass water at times of sampling.

In-river monitoring should be emphasized and further developed to overcome uncertainties of obtaining a "true" assessment of gas bubble disease signs at bypass sample sites. Measures for monitoring in-river fish survival under elevated levels of total dissolved gas should be developed and used in addition to assessing clinical signs of gas bubble disease. Reach survival estimates should be part of the 1996 monitoring and research activities to establish survival of fish in supersaturated reaches of the river.

2. The Panel recommends that a coordinated research program be undertaken to test (substantiate or reject) critical assumptions of the 1994-1996 monitoring program, as identified by the Biological Monitoring Inspection Team of the Gas Bubble Disease Technical Work Group (an advisory body of implementing agencies) and this Panel. The assumptions (uncertainties) in the monitoring program identified by the Biological Monitoring Inspection Team are appropriate, but the Panel recommends that they include the assumption that juvenile migrant populations can tolerate 15% (or other) incidence of gas bubble disease signs (biological criteria for managing spill). For the validity of the monitoring program to be substantiated, the Panel recommends that all of the critical assumptions be tested. The most important uncertainties are the relationships between clinical signs and mortality and the validity of signs measured at the fish bypasses in dams.

3. The Panel recommends that the coordinated research program proposed by NMFS be generally adopted for addressing the critical assumptions/uncertainties associated with the monitoring program and for measuring in-river signs and survival. The research program contains elements that, when used together, should provide good weight-of-evidence information regarding the validity of the monitoring program. Research to test the validity of

dam bypasses as biological monitoring sites was most consistently supported and highly recommended by the Panel for study in 1996. Research to establish in-river sampling sites and designs to detect and measure mortality (both as verification of existing dam-based monitoring and as a better alternative) was recommended next most strongly. Further work on protocols for clinical assessments is also recommended, but with less uniform consensus and lower priority. The Panel reiterates its recommendations in previous reports for research on sublethal effects.

4. The Panel recommends that its future use include more time for deliberations and report preparation and a more thorough briefing on implications of its recommendations for flow management in the basin. The Panel makes these recommendations to aid in the resolution of the gas bubble disease issue in the Columbia River Basin. To aid in future deliberations, the Panel recommends that its activity in advance of the 1997 migration season should commence no later than fall 1996. The Panel's deliberations do not address the controversial spill program, yet the spill program is the driver behind the gas bubble disease controversy. The Panel, therefore, recommends that it should be provided an unbiased and thorough review of the policy and technical details of the spill management program at a workshop prior to the next meeting.

Appendix B

Northwest Power Planning Council/NMFS Independent Scientific Advisory Board

Membership

Rick Williams Chair	Geneticist, formerly of University of Idaho, now a Boise consultant
Bill Liss	Ecologist, Oregon State University
Jack Stanford	River Ecologist, Flat Head Lake Biological Station, University of Montana
Jim Lichatowitch	Salmon Biologist, former Chief of Research with ODFW, now a consultant
Chuck Coutant	Oak Ridge National Laboratory
Phill Mundy	Fishery Management Biologist, Alaska Dept of Fish and Game, formerly with Col. River Inter-Tribal Fish Commission, now a consultant
Dick Whitney	Retired Professor, University of Washington, College of Fisheries
Lyle Kelvin*	Statistician, retired from OSU, Emeritus Professor
Mike Erho*	Biologist, Mid Columbia PUD, now Mid Columbia Studies Coordinator

* These two are leaving the panel. Five new members will be announced in the next couple of weeks. Nominations were solicited from all over the country. A total of 85 nomination were received. These were reviewed by a nominating committee comprising:

Don Bevan	Snake River Recovery Team
John Magnusson	NRC Salmon and Society Chair
Lyle Kelvin	Retiring from the Board

This committee made their recommendations to Will Stelle (NMFS) and the Chair of the Northwest Power Planning Council who will determine the replacement and new members.

(B) The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:

(i) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;

(ii) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;

(iii) Adequate data will exist to determine compliance with the standards; and

(iv) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.

(C) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;

(D) The Commission may, at its discretion, consider alternative modes of migration.

National Marine Fisheries Service

Total Dissolved Gas Petition

Summary of Public Comment

On Friday February 16, 1996 a public hearing was held at 1:00 p.m. in room 3A at DEQ Headquarters. The hearing officer was Mr. Bill Young of the Department, assisted by Russell Harding. Oral testimony was taken from 13 persons. That testimony is summarized below.

Rick Applegate, Trout Unlimited

Mr. Applegate supported the petition, and requested that the Commission grant the variance. He believed there is a need to improve in-river conditions, and that spill is the safest means to by-pass fish around turbines. He associated a two percent mortality with spill versus a 10-30 percent mortality for turbine passage, per project. He did not advocate uncontrolled spill due to the incidence of gas bubble disease. He believed the monitoring should be intensified, and noted that no significant mortalities were recorded as a result of the 1995 spill.

Spill is part of the risk-spreading experiment which includes transport. Fish runs continue to decline because we have not returned the river to its natural flow. Even opponents of spill agree that in a good water year, spill survival approximates the projected estimates. During 1995 55,000 fish were monitored, and less than one percent had signs of gas bubble disease. Resident populations showed some signs, but overall these were no large.

We need to take action. No action is risk free. Our biggest mistake is taking too much time.

Stephen Phillips, Habitat Committee, Pacific Fishery Management Council

Mr. Phillips read a 1994 resolution adopted by the Council supporting spill.

Thane Tiensen, Salmon for All

The Columbia River commercial fishery is all but extinct. It needs fish put back in the river. Spring salmon are the most valuable, and they are caught at a time when seasonal jobs are at their low point. For the past two years there has been no fishery at all due to no returning adults.

We need to balance risks to get fish back in the river. The opponents of spill have been proven wrong. The fisheries agencies unanimously support spill because they believe it will improve the situation.

If there is no fishery, there is no reason to bring fish back. Fish have survived high dissolved gas levels for tens of thousands of years.

Liz Hamilton and Merritt Tuttle, Northwest Sport Fishing Industry Association

Ms. Hamilton recorded her resentment at not being able to directly address the Commission, an opportunity that had been afforded to others, including spill opponents. She requested that in future she be allowed to address the Commission directly. Ms. Hamilton read two letters into the record. The first is from Susan Foster, Ph.D. Dr. Foster is a teacher at Mount Hood Community College. She is concerned for the passage of fish. She believes that fish belong in the river, and that spill is the safest passage for getting fish past dams. The second letter is from Frank Warren of the Pacific Fishery Management Council in which he requests approval of the variance.

Merritt Tuttle introduced himself as the science and policy advisor to the Northwest Sport Fishing Industry Association. The Association represents hundreds of businesses and thousands of waged jobs. He explained that business is outcome oriented and that it is in strong support of the variance because it believes it will result in a positive outcome.

He believes that a five percent higher dissolved gas level would be required to achieve an 80 percent fish passage efficiency. Survival rates in 1995 were 18 percent higher than the previous year with steelhead being 24 percent higher, according to Fish Passage Center data.

The question is not whether to grant the variance since all salmon advocates support the granting of it. He questioned the motivation of those opposing the variance. He stated that Bonneville Power Administration has a cap on what it can spend for salmon recovery and that the Direct service Industries have cut their deals with Bonneville. Tuttle alluded to testimony presented last year by spill opponents and the dire predictions they made. These predictions were not supported by the 1995 spill results.

The spring 1995 netpen mortalities on the Willamette River were not monitored for TDG. The pens were buckled leaving the smolts unable to sound. The survivors which were 70 percent of the fish showed no incidence of gas bubble disease. Fish need cold, clear water and safe passage to the ocean. Dr. Anderson, from last year, predicted a two percent loss of smolts, versus an almost 25 percent improvement in fact.

There were no walleye or squawfish floating in the river. Fish need water. We need to put common sense back into the equation. Spill can provide conditions in the Columbia River for all users.

Charles Ray, Idaho Sport Fishermen and Conservation, and Idaho Rivers United

We want to restore salmon and steelhead in Idaho. Spill is part of a broader interest in salmon and steelhead. An important aspect of spill is to enable salmon to pass the dams. The evidence of its efficacy is incontrovertible. We support spill. We support the variance. Oregon state needs to look at the broader picture rather than just one element of it. Is the State of Oregon committed to improving this river and honoring the treaties of 1855 and the promises made to restore fish? I urge the Commission to grant the variance but with a five percent higher level of dissolved gas in both the forebays and the tailraces in the spirit of adaptive management. There have been significant increases in adult returns benefiting from spill in previous years.

Spill needs to be high enough to obtain an 80 percent fish passage efficiency at all dams.

Brent Bowler, Columbia River Coordinator, Idaho Department of Fish and Game

Mr. Bowler stated that he is representing the State of Idaho which supports the variance for smolt migration. One of the key measures that can be taken to improve salmon migration is spill until such time as modifications are made to dams. Spillway passage is currently the best means of passing fish by dams. The State of Idaho supports an 80 percent fish passage efficiency as a risk-spreading strategy.

Controlled spill is important from a research point of view. It is part of looking for long term options for salmon. A spill program must have adequate monitoring. Mr. Bowler is confident that the monitoring and research conducted in 1995 was adequate. He urged the Corps of Engineers to complete the repairs to the damaged turbines at Ice Harbor as soon as possible. Improved survival accompanied the higher spill in 1995 as compared with 1994.

Margaret Filardo, Fish Passage Center

The Fish Passage center compiles fish passage statistics, and since 1994 has been tasked with collecting TDG data. In 1995 17,725 juvenile salmon smolts were observed. Of these, 242 fish (or 3/10 of 1 percent) showed any signs of gas bubble disease. No signs were above the lowest in severity.

The Fish Passage Center provided a critique of the Cramer report commissioned by the DSIs. The Fish Passage Center met with the contractor on December 15, 1995 to discuss the lack of confidence intervals in the study. This report is now in its third iteration, and the Fish Passage Center is currently reviewing it. Riverine conditions were comparatively better in 1995 than they were in 1994. While there were higher gas levels, there was also higher survival. Survival of year old salmon was 61 percent in 1994 compared to 77 percent in 1995. The same rates for steelhead were 62 percent in 1994 compared to 78 percent in 1995. Survival for both species in 1995 was 92 percent.

Jim Myron, Interim Conservation Director, Oregon Trout

Oregon Trout was the lead agency in a petition to save the fish. Mr. Myron asked, how are the fish doing? He replied that they are going extinct. He agrees with Mr. Applegate that we need to take some risks on behalf of the fish.

Dianne Valentine, Oregon Natural Resources Council

Ms. Valentine believed the Commission should grant the variance because the higher flow and spill, along with the monitoring indicating no signs of gas bubble disease, suggests that 1995 was a success. Ms. Valentine supports the achievement of an 80 percent fish passage efficiency as being necessary to implement the NMFS biological opinion.

She stated that it would be nice to get away from the yearly circus. Now that adequate monitoring is underway, the Commission should consider a multi-year variance next year.

Tony Nigro, Oregon Department of Fish and Wildlife

ODFW supports the request for a variance for seven reasons.

1. Snake and Columbia River runs of salmon are in crisis. Wild spring Chinook salmon that used to number 2,000,000 in the 1880s presently number 2,000. If this trend is not reversed, recovery of these fish cannot be assured.
2. Survival must be improved immediately. Current long term average survival needs to be doubled or tripled.
3. Survival past dams needs to be improved. There is no single measure that can assure this. Survival can be improved if fish can avoid the turbines.
4. Means other than mechanical by-pass systems are needed to achieve a passage of 80 to 90 percent of fish past the turbines.
5. Spill is the only means of routing fish past turbines. The number of fish avoiding turbines increases with spill. At 110 percent, only 65 percent of fish are routed away from turbines.
6. NMFS's monitoring has proven to be responsible and provides real-time monitoring of the spill program. Various detection levels were used in searching for gas bubbles ranging from 4X to 40X magnification. One third of one percent showed any signs of gas bubbles. Of 1,200 fish sampled at Bonneville and Ice Harbor, none showed signs of gas bubble trauma.
7. The benefits of decreasing turbine mortality overcome the dangers from dissolved gas. Survival was higher in 1995 than in 1994 when both spill levels and gas were less.

Consistent with last year's testimony, the 1995 spill demonstrated that fish can sound and have lower mortality. Juvenile and adult fish may be able to avoid supersaturated water. The sub-lethal effects of elevated levels of total dissolved gas are likely no more than the sub-lethal effects of turbine passage.

Last year's scientific predictions stated that there would be significant mortalities associated with spill. They failed to discuss their assumptions. The facts are that there were no mortalities in migrating fish, and overall survival was high. There are technical flaws in the Cramer studies. Reviews of the *1995 Project Spill Review* suggest that there are difficulties with the confidence intervals.

It is time to act. The monitoring program is in place. The NMFS petition is reasonable but conservative. Approving it will bring about significant improvements.

Raphael Bill, Confederated Tribes of Umatilla

The Confederated Tribes of Umatilla have lived in the Columbia Basin for tens of thousands of years hunting, picking berries and fishing in the streams. The Tribes are close to the land and the salmon. They did not attempt to manage the salmon because they lived in harmony with them. The salmon belong in the river, not in trucks or in barges. Dams have changed the rivers for the worse. The best way to the ocean is through spill over the dams.

Mr. Bill requests that the Commission grant the variance. Spill is required to avoid fish being crunched in turbines or suffocating in trucks. Removing fish from the river results in them dying or suffocating, or they do not receive an imprint. Mortalities from spill are less than other methods. The only safer method is to tear out the dams, but Mr. Bill is not asking for that, he is asking for spill.

The treaty of 1855 asks for Tribal rights and for salmon at the usual and accustomed places. If this were not to be protected, Tribal ancestors would not have signed the treaty. Scientists are telling us what the elders already know, that fish belong in the river. Industry groups using junk science have deliberately misled the issue. There were 90,000 mortalities in 1994 due to transport, but no mortalities from spill.

Mr. Bill urged the Commission to consider an even more generous variance than the one sought.

Jim Griggs, Confederated Tribes of Warm Springs, and Columbia River Inter-Tribal Fish Commission

The Commission is faced with two requests to benefit outmigrating salmon. Neither of these requests go far enough. Mr. Griggs requests at least 125 percent supersaturation. Salmon survive better at 125 percent or higher than they do in trucks or through turbine passage. Salmon is important to the tribes. It is culturally important.

Industry predictions on spill last year were wrong.

The Spring Creek Hatchery tule Chinook contribute to the ocean fisheries. They are a full commercial treaty fishery. The Tribes have sacrificed their commercial fisheries. The

Spring Creek fish would provide additional fish for commercial fishing. These fish will also reduce harvesting pressure on the threatened and endangered species.

Spill is also important for the migration of the Pacific Lamprey. We need to focus on fixing the problems so that we can achieve an 80 percent fish passage efficiency and a 90 percent survival and a 110 percent total dissolved gas standard. The Corps needs to provide gas abatement devices. The Commission should ask the Corps to install these to help meet high runoff situations or low power market conditions.

Jonathan Poisner, Conservation Chair, Sierra Club

The Sierra Club supports the spill. Mr. Poisner agrees with all previous speakers. He wishes to see the annual process stopped in favor of a more permanent solution.

In addition to the above oral testimony, written testimony, as summarized below, was received from the following persons:

Raphael Bill, Confederated Tribes of Umatilla

As summarized above.

Jim Griggs, Confederated Tribes of Warm Springs and Columbia River Inter-Tribal Fish Commission

As summarized above.

Merritt Tuttle, Northwest Sport Fishing Industry Association

As summarized above.

Susan A. Foster, Ph.D., Mount Hood Community College

As summarized under the testimony of Liz Hamilton, Northwest Sport Fishing Industry Association.

Frank Warrens, Pacific Fishery Management Council

As summarized under the testimony of Liz Hamilton, Northwest Sport Fishing Industry Association.

Rick Applegate, Trout Unlimited

as summarized above.

Don Weitkamp, Ph.D., Parametrix, Inc.

Allowing the gas levels to reach 120 percent in the forebay of dams poses a considerable risk to biological resources. A level of 120 percent in the forebay means the level in the tailrace of the dam upstream has been considerably higher for 12 hours. Gas levels of 125-130 percent will risk as much damage to salmon as will be caused by turbine passage. These losses will not be measured because dead fish will disappear in reservoirs.

Dr. Weitkamp urges that 120 percent be established as the maximum level of dissolved gas for spill.

Alan Henning, Acting manager, water Quality Unit, EPA

Region 10 of the U.S. Environmental protection Agency supports the NMFS request for a short term variance. EPA believes that granting the requested variance will benefit salmon recovery efforts.

James Buchal, Ball, Janik & Novack

The terms of reference presented to the NMFS expert panel on gas bubble disease are too restrictive. They confine themselves to whether the smolt monitoring program provides enough data to protect migrating juvenile and adult salmonids, rather than broader questions about whether spill is benefiting fish. The Commission should not grant this waiver.

In a separate communication, Mr. Buchal alludes to results obtained from ODFW's FLUSH model. He also enclosed a memorandum from the Department of Justice explaining that results obtained from the model, and any modifications made to it, violated a court order. Neither the model nor results obtained from it may be presented to the EQC. Mr. Buchal notes that in court, concealed evidence is deemed to be adverse to the party concealing it, and he hopes we will draw the same inference here.

James Conley, North Santiam Watershed Council

Mr. Conley thinks the NMFS request is too conservative, and the Commission should approve a waiver for TDG not to exceed 125 percent at tailwater monitors below dams. This would enable an 80 percent fish passage efficiency.

Margaret Filardo, Fish Passage Center

As summarized above.

Tony Nigro, Oregon Department of Fish and Wildlife

As summarized above.

Ted Strong, Columbia River Inter-Tribal Fish Commission

CRITFC recommends the Commission approve a variance for the Spring Creek Hatchery Release of 120-125 percent dissolved gas. The Commission believes levels of up to 130 percent where supersaturated water mixes with river currents is reasonable. CRITFC recommends this along with a number of conditions including that monitoring should occur all year round, that the Corps should install gas abatement devices on its dams, that physical and biological monitoring should accommodate adaptive management whereby experiments could be run to answer critical uncertainties.

Much of the rationale for this request is contained in ODFW and the Tribe's *1995 Spill and Risk Assessment*. CRITFC has provided a table in summary of its scientifically based evidence that higher levels of gas benefit fish that shows that with gas levels up to 125 percent fish passage efficiencies increase and juvenile fish mortality conversely decreases.

Nanci Tester, Direct Service Industries

The Direct service Industries forwarded the latest report by S.P. Cramer and Associates entitled *Seasonal Changes in Survival of Yearling Chinook Smolts Emigrating Through the Snake River in 1995 as estimated from Detections of Pit Tags*. The report is dated February 1996.

Despite four iterations of Cramer's report, the conclusions have remained constant, *i.e.* that there is a significant decrease in survival of fish exposed to elevated gas levels. Snake River endangered fish were left in-river the longest and were subject to the greatest exposure to elevated levels of gas.

The fisheries agencies requesting the variance should provide a full justification for the request rather than relying on critiques of work commissioned by others. Direct Service Industries offer the following alternatives for Commission action:

(i) denying the request;
(ii) conditioning any variation to the standard on demonstrable proof of benefit;
(iii) allowing only a partial increase such as 110 percent in the forebay and 115 percent in the tailrace;
(iv) limiting the number and/or duration of projects spilling;
(v) providing a safe haven from gas supersaturation at an intermediate project by limiting gas exposure and duration; or
(vi) conditioning approved gas levels on rigorous real-time monitoring data.

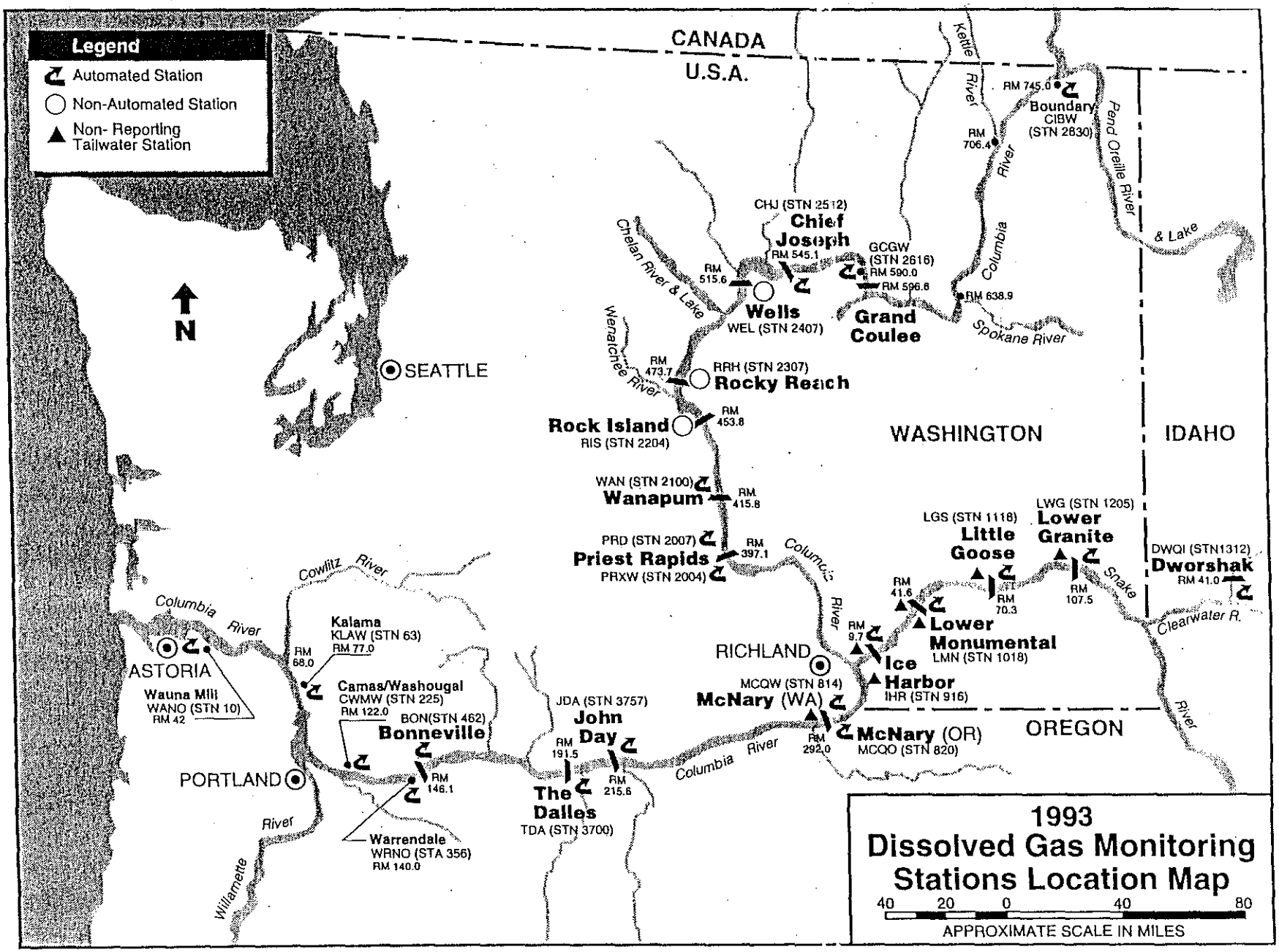


Figure 1. Locations of Dissolved Gas Monitoring Stations.

Appendix F

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

In the matter of the National Marine Fisheries Service's request to spill water to assist out-migrating Snake and Columbia River salmon smolts	((((	ORDER

WHEREAS the Department of Environmental Quality received a request from the National Marine Fisheries Service dated January 12, 1996, to adjust the Total Dissolved Gas Standard as necessary to spill over dams on the Columbia River, commencing at midnight on April 10, 1996, and finishing at midnight on August 31, 1996, to assist out-migrating Snake and Columbia River salmon smolts.

WHEREAS the public was notified of the request on January 22, 1996, and given the opportunity to provide testimony at 1:00 p.m. on February 16, 1996, and the opportunity to provide written comments until 5:00 p.m. on February 16, 1996.

WHEREAS the Environmental Quality Commission met on February 23, 1996 and considered the request, justification and public comment, and deferred a decision until its next meeting.

WHEREAS the Environmental Quality Commission met on April 12, 1996 and considered the request, justification and public comment.

THEREFORE the Environmental Quality Commission orders as follows:

1. Acting under OAR 340-41-205(2)(n)(B), the Commission finds:

(i) failure to act will result in greater harm to salmonid survival through in-river migration than would occur by increased spill because estimated mortalities for fish passing through turbines is between 10 and 15 percent compared to an estimated mortality of between 2 to 3 percent mortality for fish passing over spillways.

(ii) the balance of risk of impairment to fish due to elevated dissolved gas levels needs to be balanced against mortality of turbine passage. It is clear from the netpen mortalities at Ice Harbor in May and June 1995 that elevated dissolved gas levels do result in significant mortality. This is well above the range that instream bioassays indicate that mortalities will occur. Correspondence from Oregon Department of Fish and Wildlife (ODFW) and the Tribes in relation to last year's petition equated the mortality from turbines with elevated dissolved gas at around 120 percent. This is considered a conservative estimate. Given the conservative nature of this estimate along with the data yielded by the netpen mortalities at Ice Harbor, the balance of the risk of impairment at the levels sought in the petition is tipped in favor of granting the variance;

(iii) NMFS has submitted a detailed physical monitoring plan which is the same as last year. Physical monitoring will occur at 37 sites in the mainstem Columbia, lower Snake and lower Clearwater Rivers in the forebays and tailraces of all spilling dams. The physical monitoring plan seeks to overcome the difficulties encountered last year with equipment failures and unreliable readings through rapid equipment repair including the use of properly calibrated backup equipment, and weekly instrument verification. Hourly data will be posted electronically, as it was last year. Implementation of the physical monitoring plan will ensure that data will exist to determine compliance with the standards;

(iv) NMFS has submitted a detailed biological monitoring program which also mirrors that of last year. Significant differences are the resident invertebrates will not be monitored in 1996. The incidence of GBD in resident invertebrate populations was so low in previous years that no benefit is seen from continuing with it. Smolt monitoring will continue as it did last year with examination of smolts being undertaken with 10X to 40X dissecting microscopes. Signs of GBD will be sought on non-paired fins, eyes and lateral lines. The Expert Panel on Gas Bubble Disease suggests that it is unknown whether or not the proposed biological monitoring program will provide data to show that migratory and resident biological communities are being protected. This uncertainty arises from the untested critical assumptions that underpin the monitoring program. Notwithstanding this, the Expert Panel proposes that the monitoring program should be implemented. It is the best available monitoring at this stage, and provides the best possible information within the constraints noted by the Expert Panel. The Expert Panel did, however suggest modifications to the monitoring program that may ameliorate some of these shortcomings. These modifications should be incorporated into the monitoring program.

2. The Environmental Quality Commission approves a modification to the Total Dissolved Gas standard for spill over the Columbia River dams subject to the following conditions:

(i) Approve a revised total dissolved gas standard for the Columbia River for the period from midnight on April 12, 1996 to midnight on August 31, 1996;

(ii) Approve a total dissolved gas standard for the Columbia River of a daily (12 highest hours) average of 115 percent as measured at established monitors at the forebay of the next dam downstream from the spilling dam during this time;

(iii) Approve a further modification of the total dissolved gas standard for the Columbia River to allow for a daily (12 highest hours) average of 120 percent as measured at established tailrace monitors below the spilling dams during this time;

(iv) Approve a cap on total dissolved gas for the Columbia River during the spill program of 125 percent, based on the highest two hours during the 12 highest hourly measurements per calendar day during this time; and

(v) Require that the Director halt the spill program if *either* 15 percent of the fish examined show signs of gas bubble disease in their non-paired fins, *or* five percent of the fish examined show signs of gas bubble trauma in their non-paired fins where more than 25 percent of the surface area of the fin is occluded by gas bubbles, whichever is the less;

(vi) Direct the Director to frame questions concerning the benefits of spill and the accompanying monitoring program for the Northwest Power Planning Council's Independent Scientific Advisory Board;

(vii) Require NMFS to provide funding for the Department to hire a fisheries biologist or fish physiologist to assist in collecting and analyzing data on total dissolved gas and its effect on beneficial uses;

(viii) Require that NMFS incorporate the modifications suggested by the Expert Panel on Gas Bubble Disease into its biological monitoring program;

(ix) Require NMFS to incorporate the following conditions into its program:

1. NMFS must provide written notice to the Department within 24 hours of any violations of the conditions in the variance. Such notice shall include actions proposed to reduce TDG levels or the reason(s) for no action;

2. TDG data and incidence of GBD signs in smolts and adults will be reported to the Department daily. Hourly TDG levels collected from the forebays and downstream locations of McNary, John Day, The Dalles, and Bonneville Dams will be reported to the Department daily. Incidence of GBD signs in smolts collected from McNary, John Day, and Bonneville Dams and adults collected at Bonneville and Lower Granite Dams will be reported the Department daily. Signs of GBD in smolts will be measured by using a variable (10X to 40X) dissecting scope. Unpaired fins, eyes, and lateral line will be examined for the presence of bubbles. Smolts will be monitored daily. Signs of GBD in adults will be measured using at least a 2.5X magnification device and examining fins, eyes, mouth, opercula, and body for bubbles. Adults will be monitored at Bonneville Dam three times per week and seven days a week at Lower Granite Dam;

3. The Commission will require that by January 15, 1997 NMFS provide a report to the Department with a draft of the report released for peer and public review no later than December 1, 1996. The report shall contain:

(a) Statistical evaluation of the available PIT-tag data to determine week-by-week survival changes. Techniques should be used to detect differences between groups with small sample size or maximize the sample size to increase statistical reliability. The association between survival estimates and TDG, temperature, flow related effects, or other phenomena which could affect survivorship will be evaluated;

(b) An empirical estimate of survival associated with spill;

(c) Week-by-week estimates of the quantities of voluntary vs. involuntary spill. The factors causing the spill scenario shall be stated i.e. hydraulic capacity, turbine outages, lack of a power market, etc.;

(d) Survival estimates of transported vs. untransported fish at collector projects;

(e) Survival and incidence of GBD data from net pens below Bonneville Dam. Care must be taken to avoid areas with excessive flow or elevation fluctuations or to engineer around such problems. Care must be taken to avoid size and species differences within net pens to reduce losses from predation;

(f) Incidence of GBD signs in adults and estimates of upstream spawning delays of returning adult salmonids from increased spill;

(g) Incidence of GBD signs in resident fish species collected from below Bonneville Dam. Sampling will occur once each week April 15 through August 31.

Dated: _____

ON BEHALF OF THE COMMISSION

_____

Director

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

April 11, 1996

REPLY TO
ATTN OF: OW-134

Langdon Marsh, Director
Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204

Dear Mr. Marsh:

In January of this year, Will Stelle, Regional Director of the National Marine Fisheries Service, requested a short-term variance to the total dissolved gas (TDG) standard in the Columbia River. On February 14, 1996, Region 10 of the U.S. Environmental Protection Agency (EPA) sent a letter to the Oregon Dept of Environmental Quality in support of the requested variance, stating, "We believe that the relative risks and benefits associated with the proposed modification have been carefully evaluated and that a spill program, operated in accordance with the request, will benefit salmon recovery efforts."

My understanding is that the Environmental Quality Commission will again be considering this variance request at its April 12, 1996, meeting. I want to underscore EPA's support of this requested variance.

The 110% supersaturation criterion for TDG was developed to be protective of fish. However, EPA believes that the relative risks and benefits associated with the proposed variance will benefit salmon recovery efforts as long as the spill program is operated in accordance with conditions presented in the request for the variance. The request for a variance is consistent with the Biological Opinion and the Proposed Snake River Salmon Recovery Plan to protect and restore Snake River chinook and sockeye salmon.

EPA supports the requested TDG variance because we believe the increased flows associated with the variance will provide additional benefits to salmon. More specifically, we believe that increased flows will help address adverse consequences to salmon from elevated temperatures in the Columbia River and collection and holding facilities used to transport the fish past mainstem dams. Elevated temperature, alone, is of equal or greater concern than the requested elevated TDG levels. Considered together, elevated temperature and elevated TDG levels are compounding factors that are deleterious to salmonids. EPA believes that the anticipated spring/summer spills will benefit migrating salmon because the increased flows will:

- reduce salmon migration time and
- reduce exposure to high temperatures.

Our rationale for this position is that slow moving water increases exposure to elevated temperatures. Barging fish also appears to increase exposure to elevated temperatures because collection and holding facilities are in higher temperature surface waters. Reducing exposure to high temperatures is a primary reason EPA supports the requested variance.

Essentially all of the Snake/Columbia mainstem river bordering the State of Oregon has been designated as water-quality limited for temperature under section 303(d) of the Clean Water Act. During the summer, most of the mainstem river exceeds water quality standards for temperature for critical periods coincident with salmon migration. An example of the consequences of elevated temperature is the juvenile fish kill that occurred at McNary Dam in 1994. Approximately 90,000 chinook salmon juveniles were killed while being held for transport. They were being held in surface waters, the warmest in the water column, and high temperature was cited as a major cause of this unfortunate and avoidable fish kill.

Although the waters of the Columbia River and its tributaries cannot be brought into full compliance with temperature standards within the near-term, this remains a long term goal. EPA looks forward to working with the States and Tribes adjacent to the Columbia/Snake Rivers and the Federal agencies involved in the operation of the Columbia River System. Granting of the TDG waiver with its increased flows represents a first and immediate step for dealing with elevated temperature. EPA has also indicated a willingness to work with the Oregon in developing implementation procedures for the newly adopted temperature standard. We believe that interim measures currently available should be taken to reduce the exposure of migrating salmon to high temperatures and TDG levels. Salmon protection and restoration has been identified as a priority in the EPA/Oregon Performance Partnership Agreement discussions and TDG is an issue to be worked on cooperatively. EPA is interested in exploring longer term structural solutions and operational solutions to elevated TDG levels and elevated temperature levels. Long term solutions will require broader discussions with the States, Tribes and other Federal agencies.

I appreciate your consideration of these comments. If you wish to discuss this further, please contact me at (206) 553-1234 or contact Christine Kelly of my staff at (541) 962-7218 or Sally Brough at (206) 553-1295.

Sincerely,

Charles C. Clarke
Regional Administrator

cc: Governor John Kitzhaber
Paula Burgess, Governor's Office
William W. Stelle, Regional Director, NMFS
Russell Harding, DEQ

Environmental Quality Commission

UMATILLA ARMY DEPOT CHEMICAL DEMILITARIZATION

HAZARDOUS WASTE PERMIT OVERVIEW

I. Permit Objectives for the Chemical Agent Stockpile

A. Safely Store, Monitor, and Transport to the Treatment Facility

B. Safely and Effectively Treat (aka Demilitarize, Incinerate, Dispose)

C. Adequately Prepare and Respond to Unforeseen Releases (e.g., accidents)

II. Regulatory Authorities for Each Objective

A. Storage Element

1. DEQ Regulates Wastes:

a) M55 Rockets and Leaking Munitions ("Leakers")

(1) DEQ enforces now with self-implementing regulations - interim status requirements

2. DEQ Cannot Regulate:

a) Other Munitions (e.g., artillery shells, landmines) until they enter the treatment complex for disposal

(1) These are regulated by Army procedures with some CSEPP oversight while in storage

B. Treatment Element

1. EQC and DEQ Regulate by Issuing:

a) Hazardous Waste [RCRA] Treatment Permit

b) Air Discharge Permit (DEQ issued only)

C. *Prepare and Respond to Unforeseen Releases*

1. **DEQ Hazardous Waste Permit Requires Army to have a Contingency Plan to Deal with Unpermitted Releases (accidents) that Occur During Operation.**

2. **DEQ Spill Authority Would Require Any Release to be Cleaned up by Army [OAR 340-108](e.g. Storage Releases)**

3. **Umatilla Army Depot, Itself, is Responsible for On-Depot Response and Off-Depot Coordination**

4. **Chemical Stockpile Emergency Preparedness & Prevention Program is the "Umbrella" Program for Emergency Response Coordination**

   a) Address Releases that go Off-Depot

   b) CSEPP Implemented by, and Funding Transfers Through:

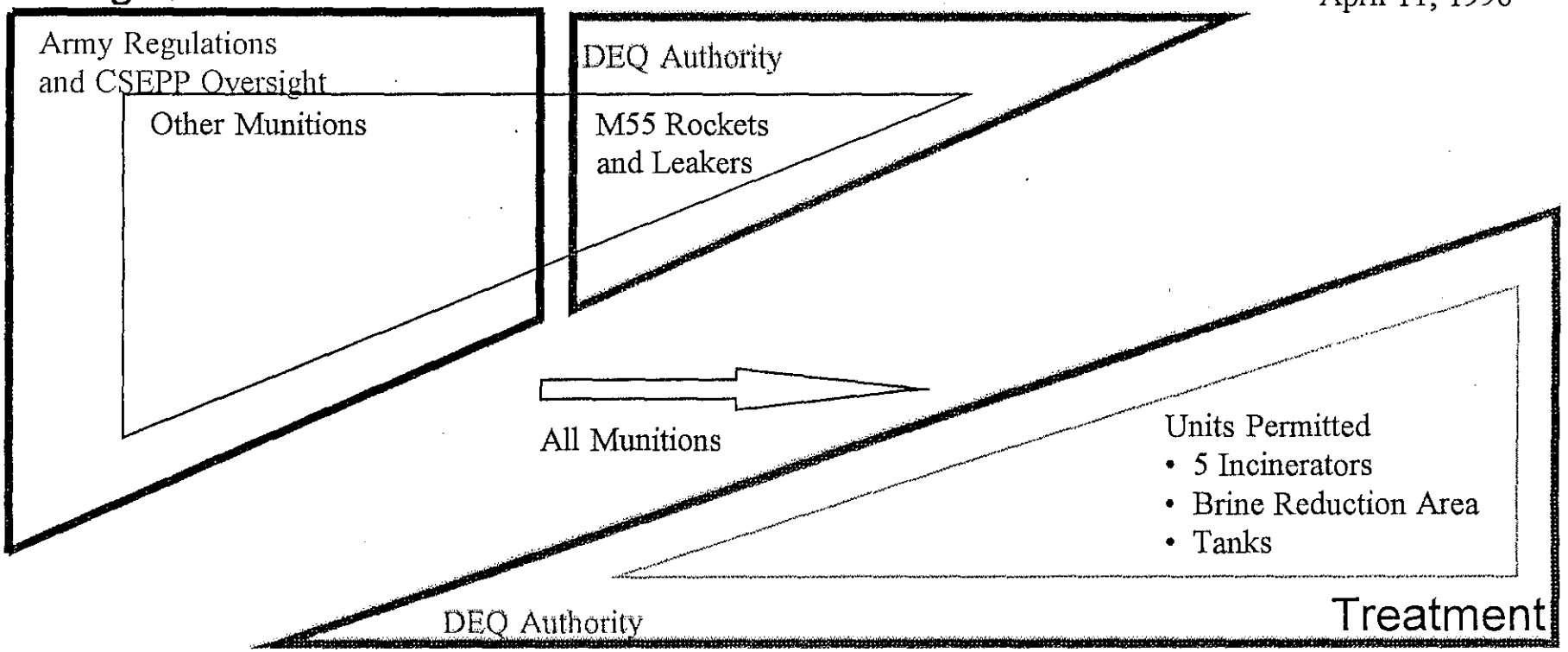
      (1) Federal Emergency Management Assistance (FEMA)

      (2) State Emergency Agencies (OEM)

      (3) County Emergency Agencies

Storage and Treat Authority

EQC Worksession
UMCDF
April 11, 1996



Prepare and Respond to Unforseen Releases

Program Timeline (not to scale)

1986 — Today — Dec 31, 2004

DEQ

III. Hazardous Waste Permit Process

A. Incorporate RCRA Technical Standards into Permit

B. EQC Determines Findings Based on Criteria in ORS 466.055, 466.060

IV. Incorporating Technical Standards into RCRA Permit

A. Started with Initial Permit Application from Army in 1986

B. Development of the Permit Includes:

1. **Incorporating RCRA Regulations and Guidance**

2. **Incorporating *"Lessons Learned"* from Johnston Atoll and Tooele**

3. **Insure Consistency with Other Treatment Sites (e.g., Anniston, Alabama and Tooele, Utah)**

4. **Developing the written protocols to satisfy the regulations**

5. **Requesting Information from the Army Until Permit writers are Satisfied They Have a Complete Application (Involved 5 NODs)**

C. The Permit Becomes the Operating Tool for the Army to Maintain Compliance

E. The Permit Application Must Describe How the Army Will Build and Operate the Demil Facility, This Includes:

1. **Munition Transportation From Storage Igloos in On-site Containers [ONCs] to the Demil Facility**

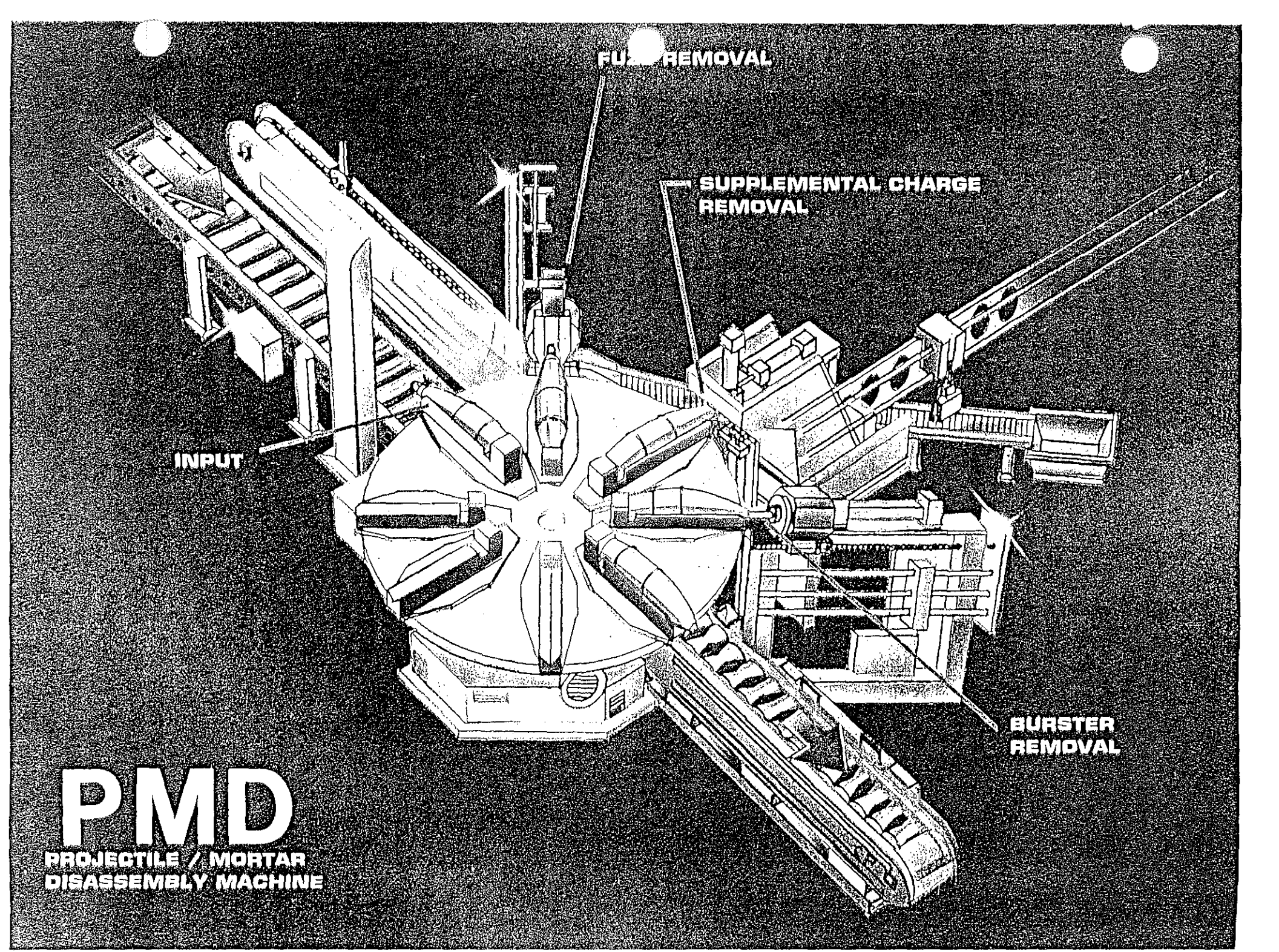
2. **Munition Demilitarization Building Designed to:**

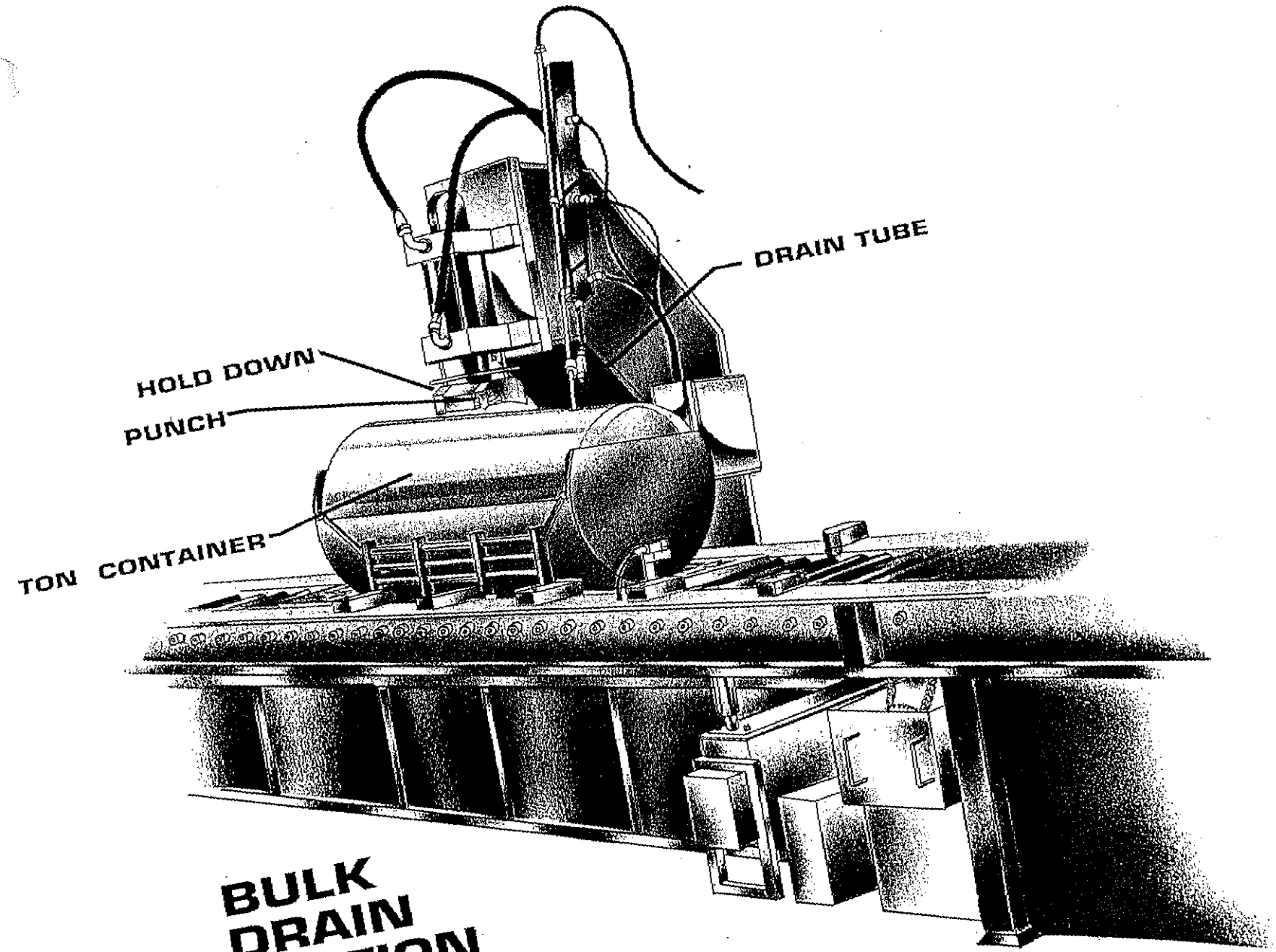
   a) Dismantle Munitions and Drain Agent by Automatic Machines [Robotics]

   b) Cascade Ambient Air Emissions "Inward" Then Through Massive Charcoal Beds (Absorbers)

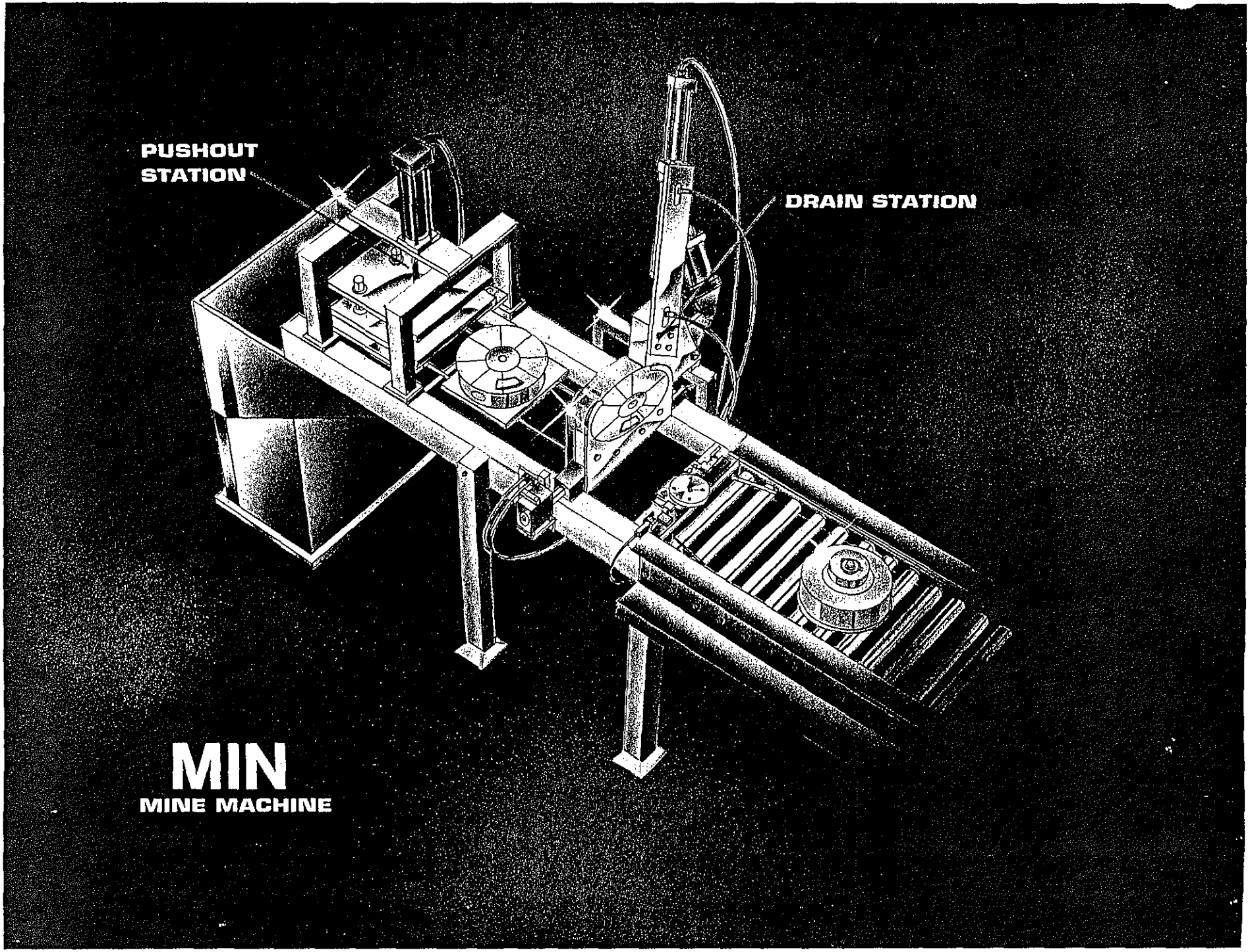
      (1) Ambient Air Also Monitored Throughout Facility which Guards Against Agent Exposure

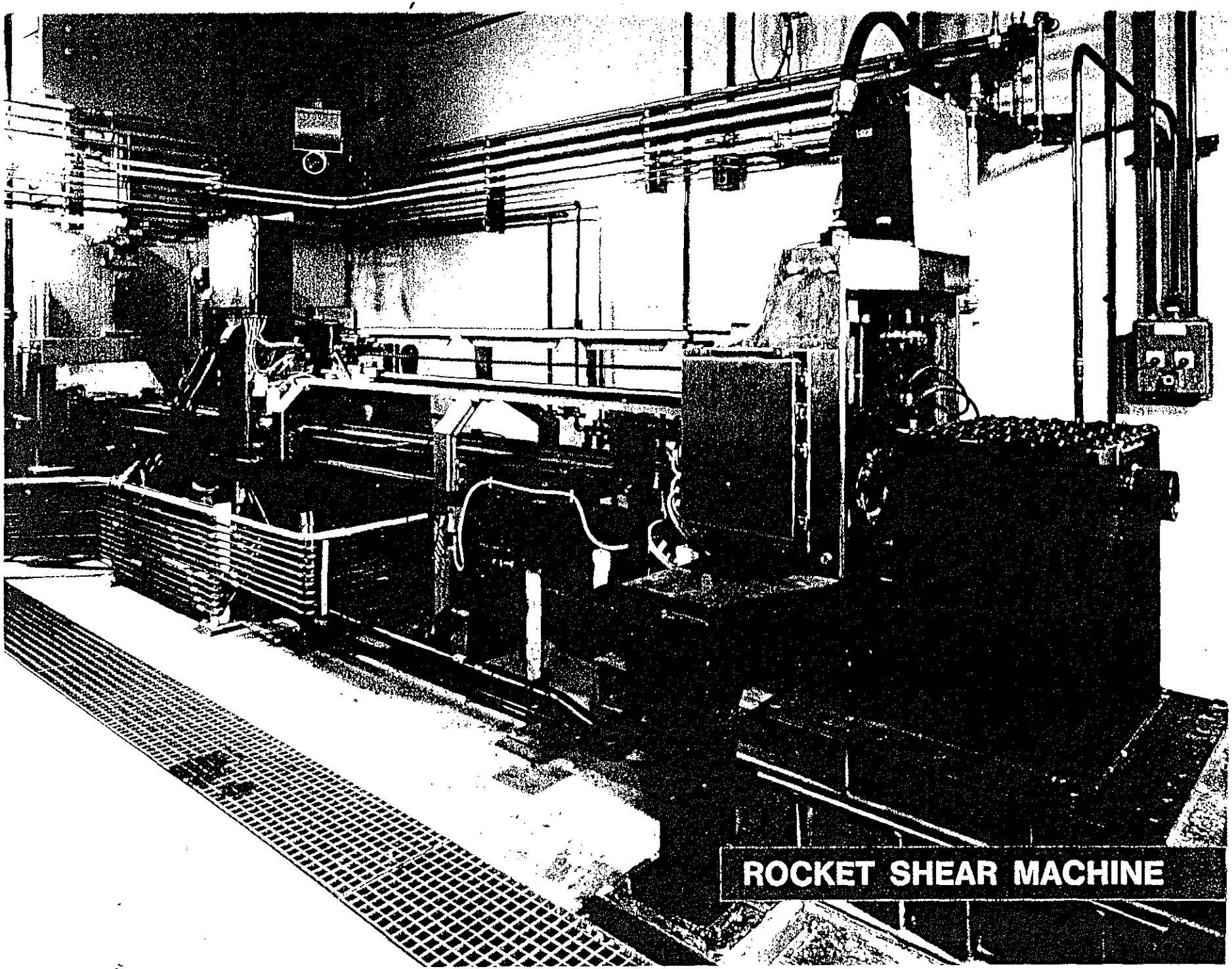
   c) Protect Environment and Workers From Blasts or Explosions

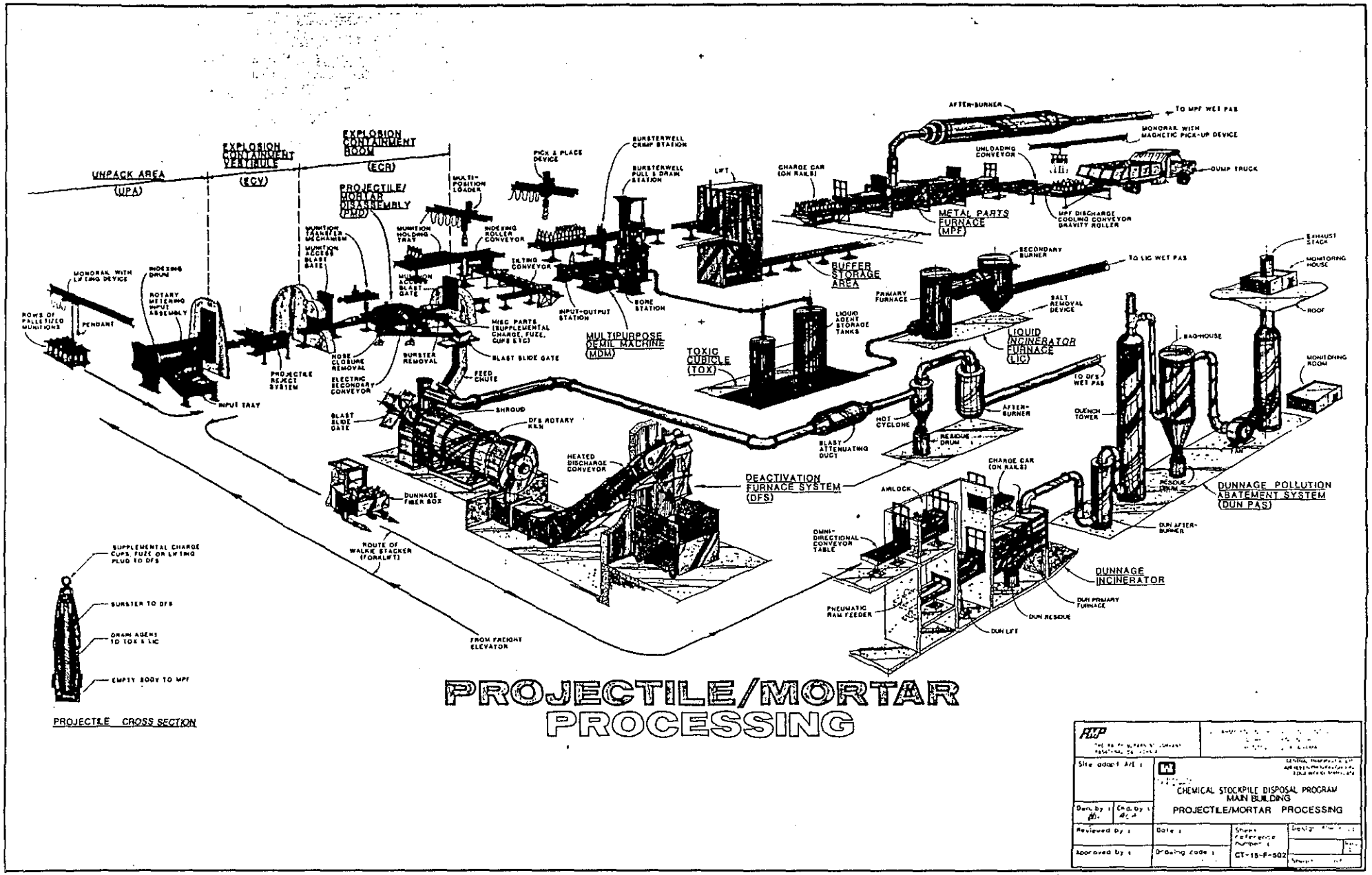

FU REMOVAL
SUPPLEMENTAL CHARGE REMOVAL
INPUT
BURSTER REMOVAL
PMD
PROJECTILE / MORTAR DISASSEMBLY MACHINE



BULK DRAIN STATION


PUSHOUT
STATION
DRAIN STATION
MIN
MINE MACHINE


ROCKET SHEAR MACHINE



PROJECTILE CROSS SECTION

PROJECTILE/MORTAR PROCESSING

AMP

Site adapt Ark :

CHEMICAL STOCKPILE DISPOSAL PROGRAM
MAIN BUILDING
PROJECTILE/MORTAR PROCESSING

Dwn. by : | Chk'd by :

Reviewed by :

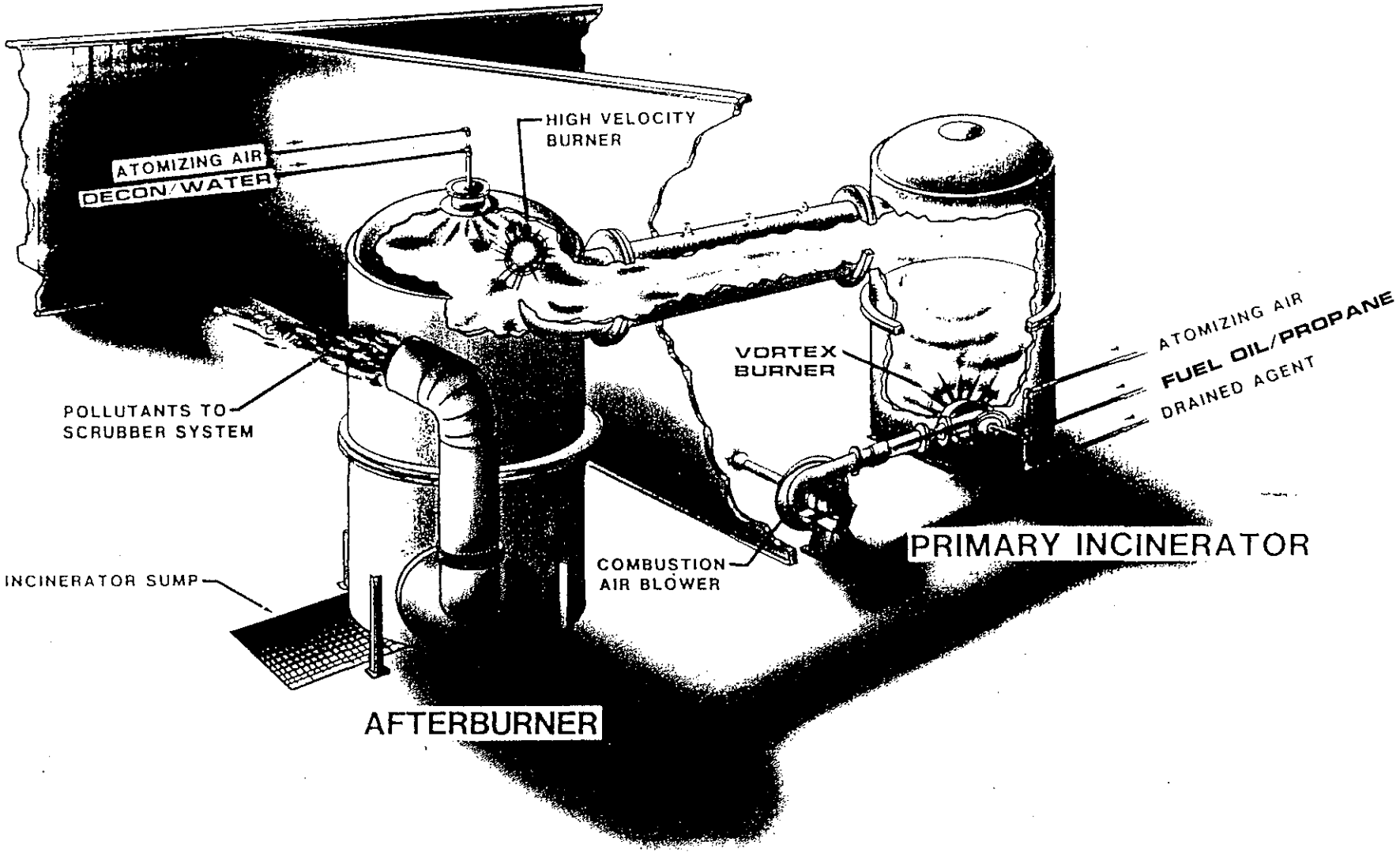
Date :

Approved by :

Drawing code :

Drawing reference number : CT-15-F-502

LIQUID INCINERATOR



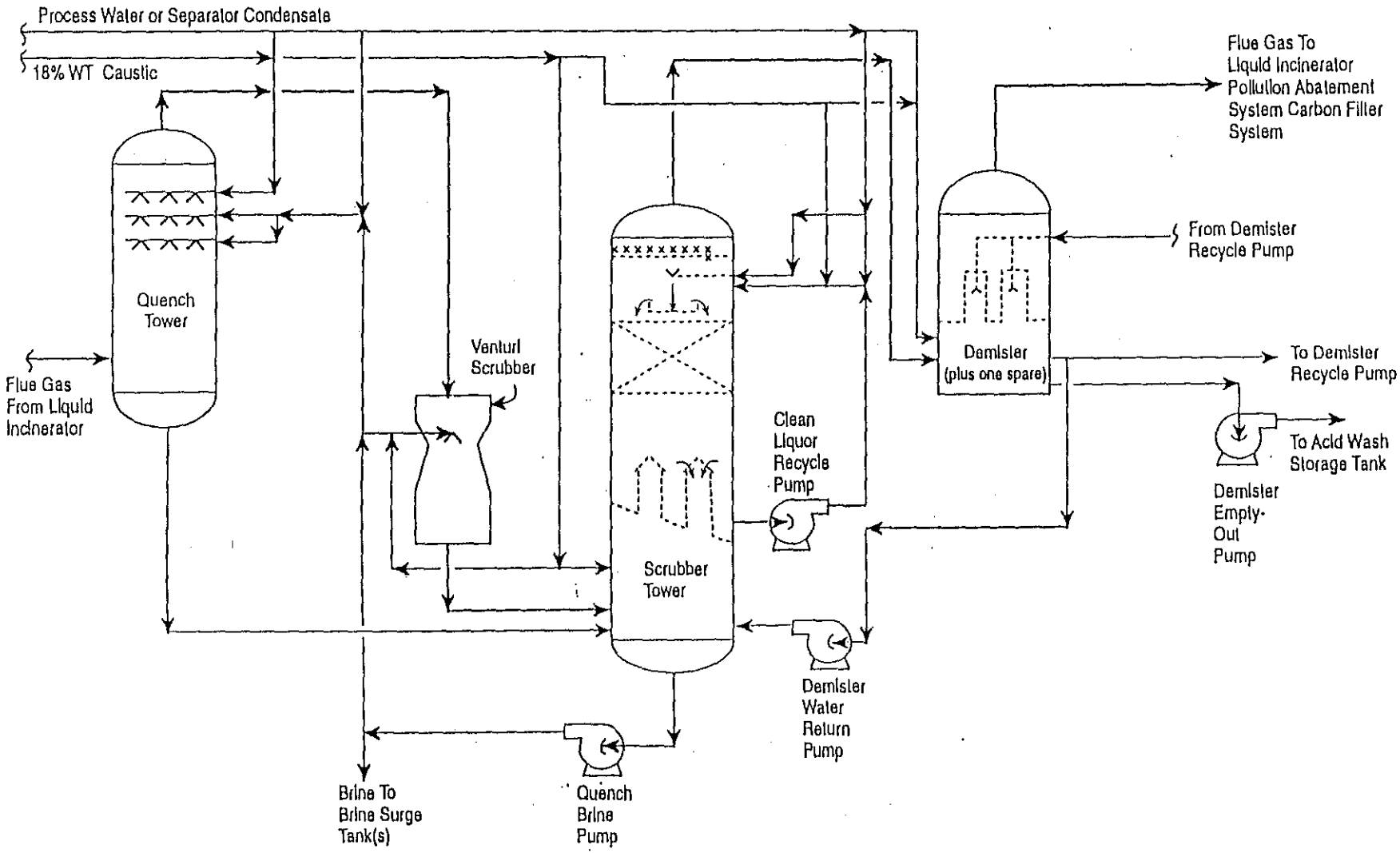


Figure D-5-3. Process Flow Diagram Pollution Abatement System for One Liquid Incinerator

I. Resultant Treatment Emission and Wastes Include:

1. **Stack Emissions - Air Emissions**
2. **Ashes and Slags**
3. **Brines**
    a) ***Treated in Thermal Unit [Brine Reduction Area — [BRA] to De-water and resulting solids disposed.***
4. **Metal Parts (e.g., shell casings) That Are Recyclable**
5. **Spent Carbon**

V. RCRA Permit — What Will It Do?

A. Insure Facility is Built to Approved Plans

1. **Permit Section II.A.: Design and Operation of Facility**

B. Insure Wastes are Managed and Handled in a Safe and Effective Manner

1. **Permit Section III: Container Storage**
2. **Permit Section IV: Tank Systems**
3. **Permit Section V: Miscellaneous Treatment Units**

C. Insure Army Responds to Unpermitted Releases

1. **Major Unpermitted Release — Accident**

a) Permit Section II.H.: Contingency Plan

D. *Insure Scrap Materials and Wastes Are Tested to be Agent-free Before Leaving Facility*

1. Permit Section II.C.: Waste Analysis

E. *Insure Trial Burn And Combustion Practices Allow For Only Safe Emissions As Are Determined By The Risk Assessment*

1. Permit Section VI: Incinerator Performance Standards during shake down, trial burn

2. Permit Section VII: Incinerator Performance Standards during normal operation

F. *Insure, upon completion of stockpile destruction, that all facility equipment is decontaminated and that no resultant contamination in the environment exists [i.e., closure requirement]*

1. Permit Section II.J: Closure

VI. EQC Criteria

A. Findings Must be Made Before Permit is Issued

B. What Administrative Process Does the Findings Use?

1. **Public Comment has Been Invited Concurrently with Public Comment for the Draft Hazardous Waste Permit**

2. **DEQ Will Compile an EQC Report**

   a) EQC Report will Include Public Comment

3. **EQC will Decide on Findings. Dependent on Findings and Response to Comment on the Draft Permit, EQC will Issue Permit Decision or Postpone Decision for More Deliberation**

C. *What Are the Findings? Five Categories Are:*

1. Location

a) Is it Suitable for the Type of Waste?

b) Does it Provide Maximum Protection from Releases?

c) Situated Sufficient Distance to Protect Public Health and Safety, Minimize Transportation, and Prevent Adverse Affects to Use of Public Lands

2. Design

a) Can it Treat the Hazardous Waste?

b) Significantly Add to the Range of Hazardous Waste

c) Significantly Add to the Type of Technology Employed

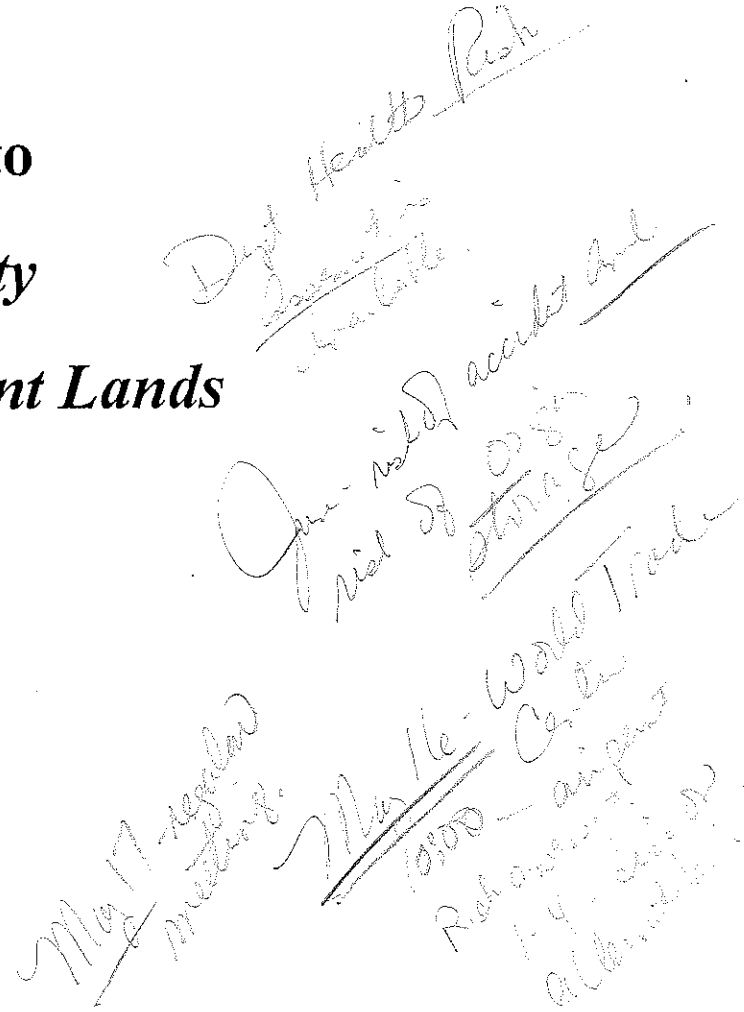
3. **Best Available Technology**

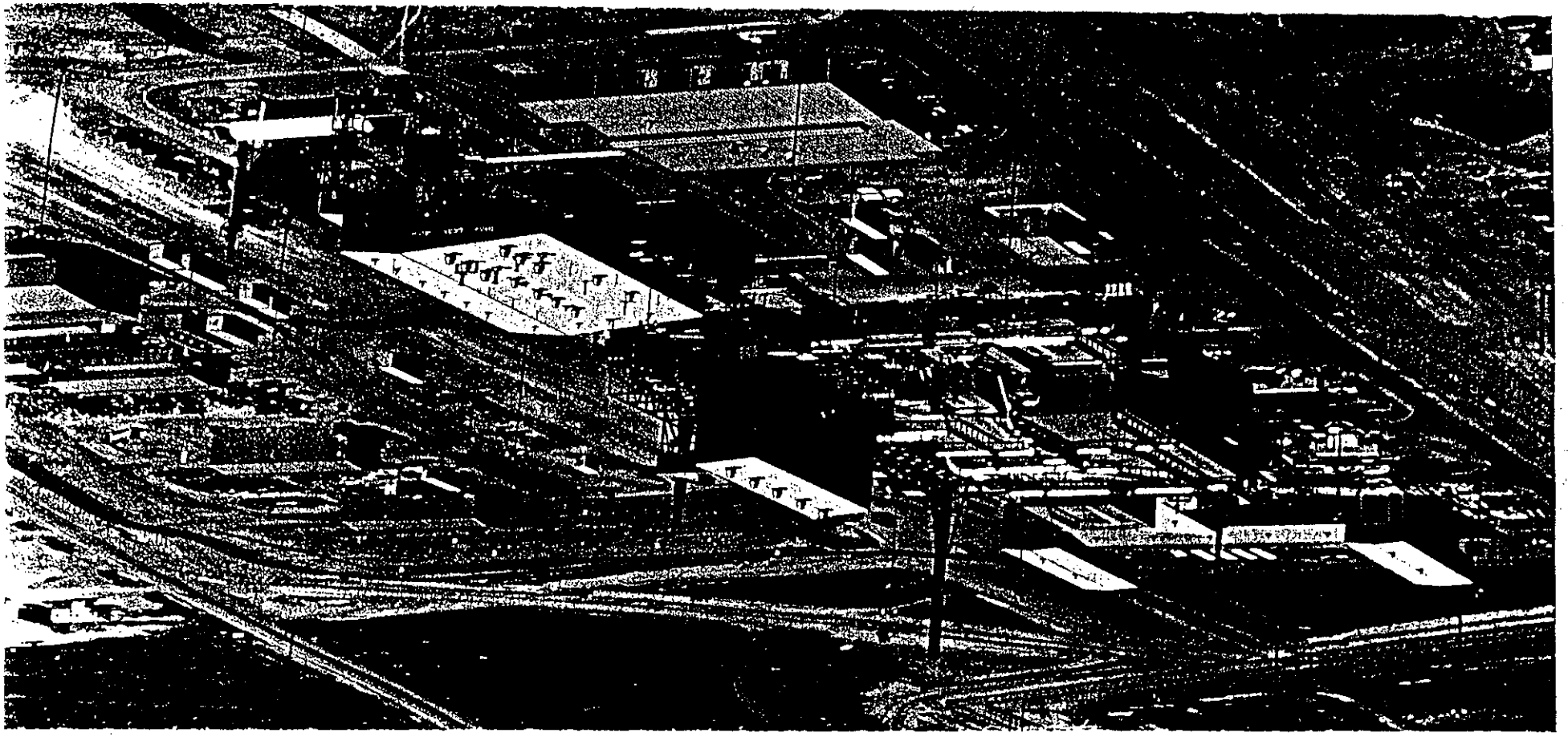
4. **Demonstrated Need**

5. **No Major Adverse Effect to**

   a) ***Public Health and Safety***

   b) ***Environment of Adjacent Lands***





Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

INVITATION TO COMMENT ON FINDINGS (ORS 466.055 & ORS 466.060) AND RISK ASSESSMENT

Public Notice Date: April 5, 1996
Comments Due: June 17, 1996

WHO IS THE APPLICANT:

The following facility has applied for a Hazardous Waste Storage and Treatment Permit that requires the Environmental Quality Commission (EQC) to make a finding on criteria listed in Oregon Revised Statutes (ORS) 466.055 and 466.060:

United States Army
Umatilla Army Depot Activity
Hermiston, OR 97838

WHAT IS PROPOSED:

In accordance with 50 U.S.C. §1521 that mandates the destruction of chemical weapons by December 31, 2004, the United States Army proposes to build and operate an incineration facility to treat the unitary chemical weapons stockpiled at the Umatilla Army Depot near Hermiston, Oregon. The permit applied for is a new permit and will be effective for 10 years.

The chemical agents stored in munitions and bulk containers at the Depot include two types of lethal nerve agents known as "GB" and "VX." These nerve agents are highly toxic in both liquid and vapor form. The Depot also stores a blister agent (commonly known as "HD" or "mustard") in bulk containers. Blister agents cause severe damage on exposed skin, eyes, and to the respiratory tract if inhaled.

The proposed facility would use five incinerators of four different types housed in one facility to destroy or treat the various components of the chemical weapon stockpile. Two liquid incinerators would be used to destroy the liquid nerve and blister agents that are drained from munitions and bulk containers. After munitions and bulk containers are drained, a deactivation furnace would be used to destroy explosives and propellants, and a metal parts furnace would be used to thermally treat remaining metal parts. A dunnage incinerator would be used to treat packing materials and miscellaneous processing waste that potentially has been in contact with the chemical agents.

The proposed permitted facility would also include a container storage area and three tank systems that store liquid agent, spent decontamination liquid, and liquid brine from the pollution abatement system. Also required for permitting are treatment units in the Brine Reduction Area that de-water the brine from the pollution abatement system. The Brine Reduction Area does not treat chemical agents.

DESCRIPTION OF CRITERIA FOR EQC FINDING:

The governing body of the Department of Environmental Quality (DEQ) is the Environmental Quality Commission (EQC), and it is the Environmental Quality Commission, rather than the Department of Environmental Quality, that must act on the permit and must make a set of findings before doing so. The findings are identified in ORS 466.055 and ORS 466.060 as follows:

466.055 Criteria for new facility.

Before issuing a permit for a new facility designed to dispose of or treat hazardous waste or PCB, the commission must find, on the basis of information submitted by the applicant, the department or any other interested party, that the proposed facility meets the following criteria:

(1) The proposed facility location:

(a) Is suitable for the type and amount of hazardous waste or PCB intended for treatment or disposal at the facility;

(b) Provides the maximum protection possible to the public health and safety and environment of Oregon from release of the hazardous waste or PCB stored, treated or disposed of at the facility; and

(c) Is situated sufficient distance from urban growth boundaries, as defined in ORS 197.295, to protect the public health and safety, accessible by transportation routes that minimize the threat to the public health and safety and to the environment and sufficient distance from parks, wilderness and recreation areas to prevent adverse impacts on the public use and enjoyment of those areas.

(2) Subject to any applicable standards adopted under ORS 466.035, the design of the proposed facility:

(a) Allows for treatment or disposal of the range of hazardous waste or PCB as required by the commission; and

(b) Significantly adds to:

(A) The range of hazardous waste or PCB handled at a treatment or disposal facility currently permitted under ORS 466.005 to 466.385; or

(B) The type of technology employed at a treatment or disposal facility currently permitted under ORS 466.005 to 466.385.

(3) The proposed facility uses the best available technology for treating or disposing of hazardous waste or PCB as determined by the department or the United States Environmental Protection Agency.

(4) The need for the facility is demonstrated by:

(a) Lack of adequate current treatment or disposal capacity in Oregon, Washington, Idaho and Alaska to handle hazardous waste or PCB generated by Oregon companies;

(b) A finding that operation of the proposed facility would result in a higher level of protection of the public health and safety or environment; or

(c) Significantly lower treatment or disposal costs to Oregon companies.

(5) The proposed hazardous waste or PCB treatment or disposal facility has no major adverse effect on either:

(a) Public health and safety; or

(b) Environment of adjacent lands

ORS 466.060 states:

466.060 Criteria to be met by owner and operator before issuance of permit.

(1) Before issuing a permit for a facility designed to treat or dispose of hazardous waste or PCB, the permit applicant must demonstrate, and the commission must find, that the owner and operator meet the following criteria:

(a) The owner, any parent company of the owner and the operator have adequate financial an technical capability to properly construct and operate the facility; and

(b) The compliance history of the owner including any parent company of the owner and the operator in owning and operating other similar facilities, if any, indicates an ability and willingness to operate the proposed facility in compliance with the provisions of ORS 466.005 to 466.385 and 466.890 or any condition imposed on the permittee by the commission.

(2) If requested by the permit applicant, information submitted as confidential under paragraph (a) of subsection (1) of this section shall be maintained confidential and exempt from pubic disclosure to the extent provided by Oregon law.

WHO IS AFFECTED:

Persons living in the Mid-Columbia Basin

NEED FOR PERMIT:

This source is required, by ORS 466 and Oregon Administrative Rules (OAR) 340-100 through 340-120 to obtain a Hazardous Waste Treatment and Storage Permit.

INVITATION TO COMMENT:

On behalf of the EQC, DEQ is soliciting and compiling comments from "interested parties" on the findings the EQC must make under ORS 466.055 and ORS 466.060. The criteria for the findings are generally broader in scope than the technical specifications found in the draft hazardous waste permit, which DEQ is also issuing for public comment. (See Chance to Comment, "Draft Hazardous Waste Permit"). Both the criteria, and the draft hazardous waste permit, address the following proposed operations that deal with the storage, treatment, and destruction of lethal chemical agents:

- Two Liquid Incinerators
- Metal Parts Furnace
- Deactivation Furnace
- Dunnage Incinerator
- Three Tank Systems
- Container Storage Area
- Brine Reduction Area

The Department will provide to the Environmental Quality Commission all information received during the chance to comment period. The Environmental Quality Commission (EQC) is DEQ's policy and rule-making board that must make the final finding on the criteria. The finding must be made before the EQC can issue a final permit decision, however, the finding may be made during the same scheduled session when the EQC could issue the final permit decision.

Except for the specific wording of ORS 466.055 and 466.060, there are no guidance documents or fact sheets that describe how interested parties should submit comments on the findings, except to be as specific as possible.

It is recommended that comments submitted be identified as applying to the criteria in ORS 466.055, ORS 466.060, or to the draft hazardous waste permit.

Note: The findings which the EQC must make are part of the process for issuing the hazardous waste permit and not part of the process for issuing the Air Contaminant Discharge Permit (ACDP) which is also out for public comment. DEQ encourages comments on the draft air permit as well.

Risk Assessment: As part of the permitting process, an assessment of risk associated with emissions during *normal operations* of the proposed facility was conducted by Ecology and Environment on behalf of the Department. *It is not an assessment of the risks of storage or of the impacts of a catastrophic event at the Depot.* A separate risk assessment is being conducted by the Army to cover those issues.

Although regulations do not require the Department to take public comments on the risk assessment, comments on the risk assessment which pertain to the findings the EQC must make, particularly ORS 466.055(5), would be helpful.

WHERE TO FIND INFORMATION:

Descriptions of the proposed operations can be found within the hazardous waste and air permit applications, and summarized in the hazardous waste fact sheet, the air permit evaluation report, and the DEQ Pre-Trial Burn Risk Assessment. These documents can be found at the following:

DEQ--Hermiston Office
256 E. Hurlburt, Suite 117
Hermiston, OR 97838
(541) 567-8297

DEQ--Bend Office
2146 N.E. Fourth Street, Suite 104
Bend, Oregon 97701
(541) 388-6146

Portland State University Library
951 SW Hall, Fifth Floor
Portland, OR 97204
(503) 725-4617

Hermiston Public Library
235 E. Gladys Avenue
Hermiston, OR 97838
(541) 567-2882

The hazardous waste fact sheet, the air permit evaluation report, and the DEQ Pre-Trial Burn Risk Assessment can also be found at the following locations:

Mid Columbia Library
(Kennewick Branch)
405 S. Dayton
Kennewick, WA 99336
(509) 586-3156
or 1-800-572-6251

Pendleton Public Library
214 North Main
Pendleton, OR 97801
(541) 276-1881

PUBLIC HEARINGS:

Verbal and written comments regarding the criteria can also be submitted during the public hearings scheduled for the draft hazardous waste and air permits. The times and locations for these public hearings are:

May 13, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
Pendleton Convention Center
1601 Westgate
Pendleton, OR

May 14, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
Kennewick High School Cafeteria
500 S. Dayton
Kennewick, WA

May 29, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
World Trade Center
121 SW Salmon Street
Building 2 Mezzanine
Portland, OR

June 10, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
Hermiston Community Center
415 Highway 395 South
Hermiston, OR

HOW TO COMMENT:

Written comments should be presented to the DEQ by 5:00 p.m., June 17, 1996. The mailing address is Brett McKnight, DEQ – Bend Office, 2146 N.E. Fourth Street Suite 104, Bend, OR 97701. Copies of the ORS 466.055 and ORS 466.060 may be requested from Debbie Jacky at (541) 388-6146, extension 250.

WHAT HAPPENS NEXT:

The Environmental Quality Commission will review comments received on the findings and on the proposed hazardous waste permit. The hazardous waste permit will be reviewed with the EQC at their April 12 meeting. The EQC will review the air quality permit and the risk assessment at their May 16 meeting. Also at the May 16 meeting, the EQC will also conduct a panel discussion on alternatives to incineration. Both the April and May discussions are open to the public. The EQC may direct DEQ to extend the comment period if they require more time to review the comments received. Final EQC action is scheduled for August 22 or 23, 1996.

ACCOMMODATION OF DISABILITIES: Please notify DEQ about any special physical or language accommodations you may need as far in advance of the meeting or hearing as possible. To make these arrangements, contact Sylvia Herrley at 1-800-452-4011 (toll free in Oregon), or at (503) 229-5317. People with hearing impairments may call DEQ's TDD number at (503) 229-6993.

ACCESSIBILITY INFORMATION This publication is available in alternate format (e.g. large print, Braille, Spanish) upon request. Please contact DEQ Public Affairs at (503) 229-5317 to request an alternate format.

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

PROPOSED HAZARDOUS WASTE PERMIT

Public Notice Date: April 5, 1996
Comments Due: June 17, 1996

WHO IS THE APPLICANT:

The following facility has applied for a Hazardous Waste Storage and Treatment Permit:

United States Army
Umatilla Army Depot Activity
Hermiston, OR 97838

The DEQ has conducted a review of the hazardous waste "Part B" application and is providing an opportunity for public comment.

WHAT IS PROPOSED:

In accordance with 50 U.S.C. §1521 that mandates the destruction of chemical weapons by December 31, 2004, the United States Army proposes to build and operate an incineration facility to treat the unitary chemical weapons stockpiled at the Umatilla Army Depot near Hermiston, Oregon. The permit applied for is a new permit and will be effective for 10 years.

The chemical agents stored in munitions and bulk containers at the Depot include two types of lethal nerve agents known as "GB" and "VX." These nerve agents are highly toxic in both liquid and vapor form. The Depot also stores a blister agent (commonly known as "mustard" or "HD") in bulk containers. Blister agents cause severe damage on exposed skin, eyes, and to the respiratory tract if inhaled.

The proposed facility would use five incinerators of four different types to destroy or treat the various components of the chemical weapon stockpile. Two liquid incinerators would be used to destroy the liquid nerve and blister agents that are drained from munitions and bulk containers. After munitions and bulk containers are drained, a deactivation furnace would be used to destroy explosives and propellants, and a metal parts furnace would be used to thermally treat remaining metal parts. A dunnage incinerator would be used to treat packing materials and miscellaneous processing waste that potentially has been in contact with the chemical agents.

The permitted proposed facility would also include a container storage area and three tank systems that store liquid agent, spent decontamination liquid, and liquid brine from the pollution abatement system. Also required for permitting are treatment units in the Brine Reduction Area that de-water the brine from the pollution abatement system. The Brine Reduction Area does not treat chemical agents.

DESCRIPTION OF DISCHARGE:

The facility has the following maximum allowable stack emission concentrations for nerve and blister agent:

Agent	Allowable Stack Concentration (milligrams/cubic meter)
VX	.0003
GB	.0003
Blister ("HD")	.03

In accordance with Oregon rules, the individual emission points may not emit more than .015 grains per dry standard cubic foot of particulate matter (PM_{10}) and four (4) pounds per hour of hydrogen chloride.

The draft permit requires that the Permittee conduct several trial burns and performance test to verify that emission limits from the facility for 20 metals, 49 organic constituents, two acid gases, chlorine, and particulate material meet the health protective emission rates determined in the Pre-Trial Burn Risk Assessment conducted by DEQ.

After the trial burns and performance test, the permit would be modified to place operational limits (for example, limits on waste feed rates to the incinerators, limits on O_2 and CO levels in a stack, etc.) that ensure emissions meet the risk assessment's protective emission rates.

The trial burns would also verify that the facility achieved a Destruction Removal Efficiency (DRE) for nerve and blister agent of 99.9999% in the liquid incinerator, and 99.99% for the metal parts furnace, deactivation furnace, and the dunnage incinerator.

Criteria pollutant emissions (Plant Site Emission Limits) for the proposed facility are listed separately in the Chance to Comment Form for the Air Contaminant Discharge Permit.

WHO IS AFFECTED:

Persons living in the Mid-Columbia Basin

NEED FOR PERMIT:

This source is required, by ORS 466 and Oregon Administrative Rules (OAR) 340-100 through 340-120 to obtain a Hazardous Waste Treatment and Storage Permit.

PERMIT CONDITIONS:

The permit regulates specified emission levels, design requirements, operational conditions, and monitoring and reporting requirements at the following hazardous waste units:

- Two Liquid Incinerators
- Metal Parts Furnace
- Deactivation Furnace
- Three Tank Systems
- Container Storage Area
- Brine Reduction Area

SPECIAL CONDITIONS:

- Continuous monitors for agents
- Automatic waste Feed cut-offs
- Require a Post-Trial Burn Risk Assessment
- Only Umatilla Depot waste can be treated
- Contingency Plan
- Inspection Plan
- Waste Analysis Plan

COMPLIANCE HISTORY:

The only operating chemical demilitarization facility is JACADS on the Johnston Atoll. The facility at Tooele, Utah is scheduled to come on-line in 1996. As a prototype facility, JACADS has experienced several incidents where agent has been released and/or munitions have detonated in the deactivation process. The US Environmental Protection Agency issued a fine for one of these incidents. No one was injured in any of the incidents, and the Army was able to improve the JACADS design and operation subsequent to the incidents. Design changes have been made in Umatilla as a result of what has been learned at JACADS.

OTHER DEQ PERMITS REQUIRED:

Other permits required by the Department of Environmental Quality for this source include an Air Contaminant Discharge Permit and a National Pollution Discharge Elimination System Stormwater Discharge Permit.

WHERE TO FIND THE PROPOSED PERMIT:

Copies of the proposed permit and fact sheet are available at:

DEQ--Hermiston Office
256 E. Hurlburt, Suite 117
Hermiston, OR 97838
(541) 567-8297

DEQ--Bend Office
2146 N.E. Fourth Street, Suite 104
Bend, Oregon 97701
(541) 388-6146

Portland State University Library
951 SW Hall
Fifth Floor
Portland, OR 97204

Hermiston Public Library
235 E. Gladys Avenue
Hermiston, OR 97838
(541) 567-2882

Mid Columbia Library
(Kennewick Branch)
405 S. Dayton
Kennewick, WA 99336
(509) 586-3156
or 1-800-572-6251

Pendleton Public Library
214 North Main
Pendleton, OR 97801
(541) 276-1881

WHERE TO FIND THE PERMIT APPLICATION:

The Administrative Record, which may include voluminous printed material not readily duplicable, is available for public inspection, by appointment, at:

DEQ--Bend Office
2146 N.E. Fourth Street, Suite 104
Bend, Oregon 97701
(541) 388-6146

Office hours are 8:00 a.m. to Noon and 1:00 p.m. to 5:00 p.m. Monday through Friday. The building is accessible by wheelchair. Those with special needs should alert this office when making an appointment. Contact Debbie Jacky at the above number, extension 250.

A copy of the hazardous waste permit application is available at DEQ's Hermiston office at 256 E. Hurlburt (by appointment, please call (541) 567-8297) and at the Hermiston Public Library, 235 E. Gladys Avenue, Hermiston.

HOW TO COMMENT:

Written comments should be presented to the DEQ by 5:00 p.m., June 17, 1996. The mailing address is Brett McKnight, DEQ--Eastern Region, 2146 N.E. Fourth Street, Suite 104, Bend, OR 97701. Copies of the proposed permit may be requested from Debbie Jacky at (541) 388-2146, extension 250.

PUBLIC HEARINGS:

DEQ is aware of significant interest in this permit application and has scheduled four public hearings:

May 13, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
Pendleton Convention Center
1601 Westgate
Pendleton, OR

May 29, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
World Trade Center
121 SW Salmon Street
Portland, OR

May 14, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
Kennewick High School Cafeteria
500 S. Dayton
Kennewick, WA

June 10, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
Hermiston Community Center
415 Highway 395 South
Hermiston, OR

Please note that all Public Hearings listed will begin with an information/availability session ("Open House"), followed by two hours of public testimony ("Public Hearing"). Oral public testimony during the Public Hearing portion of the meetings in Pendleton, Richland, and Portland will be taken on an individual (private) basis by a Hearings Officer (using either a transcriber or a tape recorder to record the testimony). The Public Hearing portion of the meeting in Hermiston on June 10th will be public testimony in front of the Hearings Officer and an audience.

WHAT HAPPENS NEXT:

The Department will provide to the Environmental Quality Commission all information received during the chance to comment period. The Environmental Quality Commission (EQC) is DEQ's policy and rule-making board that must make the final determination for a hazardous waste treatment facility. (More information about the Environmental Quality Commission is contained in a separate Chance to Comment Form). Following review by the EQC, the permit may be issued as proposed, modified or denied. Notice of the final decision shall be made to the applicant and each person who has submitted written comments or requested notice of the final permit decision. If you want to be notified of the final determination, write or call DEQ at the Bend address given above..

ACCOMMODATION OF DISABILITIES:

Please notify DEQ about any special physical or language accommodations you may need as far in advance of the meeting or hearing as possible. To make these arrangements, contact Sylvia Herrley at 1-800-452-4011 (toll free in Oregon), or at (503) 229-5317. People with hearing impairments may call DEQ's TDD number at (503) 229-6993.

ACCESSIBILITY INFORMATION

This publication is available in alternate format (e.g. large print, Braille, Spanish) upon request. Please contact DEQ Public Affairs at (503) 229-5317 to request an alternate format.

FACT SHEET

Draft Hazardous Waste Treatment and Storage Permit

Umatilla Army Depot Activity
Umatilla Chemical Demilitarization Facility
I.D. Number: OR6 213 820 917

April 5, 1996

I. INTRODUCTION

The U.S. Army has applied for a hazardous waste treatment and storage permit to incinerate chemical agent munitions. This incineration treatment of the chemical agents, along with the various munition components consisting of explosives, propellants, and metal casings, is sometimes referred to as "demilitarization." The Oregon Department of Environmental Quality (DEQ) is issuing a draft permit for public comment.

This facility is a new facility. That is, the facility is proposed and has not been built. Construction cannot begin until a hazardous waste treatment permit is issued by the Oregon Environmental Quality Commission (EQC) and DEQ.

The purpose of this Fact Sheet is to briefly describe the proposed facility, discuss the basis of the draft permit conditions, describe the availability for submitting pubic comments, list the steps in reaching a final permit decision, and describe where to find additional information.

This Fact Sheet has the following Sections:

II. DESCRIPTION OF ACTIVITY SUBJECT TO PERMIT

In accordance with 50 U.S.C. §1521 that mandates the destruction of chemical weapons by December 31, 2004, the United States Army proposes to build and operate an incineration facility to treat the unitary chemical weapons stockpiled at the Umatilla Army Depot near Hermiston, Oregon. The purpose of the demilitarization facility is to treat and dispose of the chemical munitions stored at the Umatilla Depot. The permit applied for is a new permit and will be effective for 10 years.

The chemical agents stored in munitions and bulk containers at the Depot include two types of lethal nerve agents known as "GB" and "VX." These nerve agents are highly toxic in both liquid and vapor form. The Depot also stores a blister agent (commonly known as "mustard" or "HD") in bulk containers. Blister agents cause severe damage on exposed skin, eyes, and to the respiratory tract if inhaled.

The proposed facility would use five incinerators of four different types to destroy or treat the various components of the chemical weapon stockpile. Two liquid incinerators would be used to destroy the liquid nerve and blister agents that are drained from munitions and bulk containers. A deactivation furnace would be used to destroy explosives and propellants and a metal parts furnace would be used to thermally treat remaining metal parts. A dunnage incinerator would be used to treat packing materials and miscellaneous processing waste that potentially has been in contact with the chemical agents.

The permitted proposed facility would also include a container storage area and three tank systems that store liquid agent, spent decontamination liquid, and liquid brine from the pollution abatement system. Also required for permitting are treatment units in the Brine Reduction Area that de-water the brine from the pollution abatement system. The Brine Reduction Area does not treat chemical agents.

III. TYPE AND QUANTITY OF WASTES TO BE STORED, TREATED, DISPOSED, AND EMITTED FROM FACILITY

On January 22, 1996, the Department of Defense declassified the inventory of unitary chemical munitions intended for disposal at the Umatilla Army Depot Activity. These munitions are:

Munition	Agent	Munition Quantity	Agent Tons
Ton Containers	HD (Mustard)	2,635	2,339.52
155mm Projectiles (M121/A1) *Artillery Shells*	GB	47,406	154.07
8 in. Projectiles (M426) *Artillery Shells*	GB	14,246	103.28
115mm Rocket (M55)	GB	91,375	488.86
115mm Rocket Warhead (M56)	GB	67	.36

Munition	Agent	Munition Quantity	Agent Tons
500 lb. Bomb (MK-94)	GB	27	1.46
750 lb. Bomb (MC-1)	GB	2,418	265.98
155mm Projectile (M121/A1)	VX	32,313	96.94
Artillery Shells			
8 in. Projectiles (M426)	VX	3,752	27.2
Artillery Shells			
Landmines	VX	11,685	61.35
115mm Rocket (M55)	VX	14,513	72.57
115mm Rocket Warhead (M56)	VX	6	.03
Spray Tank (TMU-28B)	VX	156	105.77
Total		220,599	3,717.38

The only munitions to be treated at the proposed demilitarization facility are those currently stored at the Umatilla depot. (See draft permit condition II.B).

Some of the munitions above also contain *energetics* (explosive and propellants) and all agents listed above are contained in metal casings or containers.

The energetic wastes are reactive (hazardous waste code D003) and contain such chemicals as tetryl, TNT, RDX, HMX, nitrocellulose, 2,4-dinitrotoulene, and metals such as lead and magnesium.

The metal casings, primarily made of steel and aluminum, will have metals such as lead, cadmium, chrome, barium, nickel, antimony, and barium.

Emissions from the demilitarization facility will be regulated by the hazardous waste (hw) and air quality permits. (See draft air quality permit). The hazardous waste draft permit contains a requirement to conduct trial burns to test and validate that emissions from the demilitarization facility do not exceed emission levels that are protective of human health and the environment. (See Module VI of the draft hw permit). The emission levels were determined to be protective by a risk assessment conducted by the DEQ.

One of the most important emission levels is for the chemical agents. Continuous emission monitors for agent are required to be installed at the stacks which can potentially emit agent. The draft hw permit requires that no emission shall be more than the allowable stack concentration as set by the U.S. Surgeon General. The stack concentrations are:

Agent	GB	VX	HD (Mustard)
Maximum Allowable Stack Concentration (milligrams per cubic meter)	.0003	.0003	.03

The emission levels evaluated in the risk assessment include chemical constituents expected to be, constituents that can be, and even constituents not expected to be, emitted from

the demilitarization facility. Such a broad evaluation of different pollutants allows for the risk assessment to be conservative and set protective limits. A list of the emission rates for the four types of incinerators are listed in the following table.

Allowable Emission Rates

		Emission Rates (g/sec) by Incinerator			
Constituent	CAS No.	LIC	DFS	MPF	DUN
AGENTS					
GB	107-44-8	As measured at the common stack, the combined LIC, DFS, and MPF emission rate must not exceed 4.29E-06.			1.35E-07
VX	50782-69-9	As measured at the common stack, the combined LIC, DFS, and MPF emission rate must not exceed 4.29E-06.			1.35E-07
HD (Mustard)	505-60-2	As measured at the common stack, the combined LIC, DFS, and MPF emission rate must not exceed 4.29E-04.			1.35E-05
ORGANICS					
TEQ 2,3,7,8-PCDF's [Dioxin & Furan congeners]		1.95E-09	6.69E-10	9.08E-10	3.54E-10
Total Polychlorinated Biphenyls [PCB cong]	1336-36-3		6.25E-07		1.36E-07
1,1,2,2-Tetrachloroethane	79-34-5	6.39E-06	7.33E-07	6.98E-07	1.67E-06
1,1-Dichloroethane	75-34-3	3.42E-06	7.33E-07	8.47E-07	4.81E-07
2,4,6-Trinitrotoluene	118-96-7		2.55E-06		5.95E-07
2,4-Dinitrotoluene	121-14-2		2.55E-06		5.95E-07
2,6-Dinitrotoluene	606-20-2		2.55E-06		5.95E-07
2-Hexanone	591-78-6	1.72E-05	7.33E-07	6.98E-07	5.95E-06
Acetone	67-64-1	3.31E-01	7.18E-02	8.34E-05	5.75E-02
Benzene	71-43-2	5.77E-04	1.11E-04	3.15E-04	7.61E-05
Benzoic Acid	65-85-0	1.08E-03	3.80E-04	5.91E-04	1.97E-04
Benzyl Alcohol	100-51-6	1.12E-02	2.06E-03	5.94E-03	9.88E-04
Bis(2-ethylhexyl)phthalate	117-81-7	2.59E-03	9.93E-05	1.18E-03	1.49E-04
Bromodichloromethane		3.42E-06	3.31E-06	6.98E-07	2.35E-06
Bromoform	75-22-2	3.18E-05	6.44E-05	4.22E-05	2.75E-05
Carbon disulfide		6.50E-05	7.33E-07	4.09E-05	1.61E-05
Carbon Tetrachloride	56-23-5	2.20E-04	7.33E-07	1.28E-05	6.95E-05
Chlorobenzene	106-90-7	1.67E-05	2.35E-06	1.71E-06	3.12E-06
Chloroform	67-66-3	1.39E-04	8.38E-05	5.88E-06	6.36E-05
Chloromethane	74-87-3	4.99E-03	7.33E-07	2.86E-05	8.97E-04
m-Cresol	108-39-4	1.27E-03	1.02E-05	6.23E-05	8.14E-05
o-Cresol	95-48-7	1.17E-03	1.21E-04	1.94E-03	1.99E-04
p-Cresol	106-44-5	3.94E-04	1.02E-04	6.67E-05	9.30E-05
Di(n)octyl phthlate	117-84-0	1.23E-04	1.02E-05	6.67E-05	4.43E-05
Di-n-butyl Phthalate	84-74-2	6.24E-05	1.10E-05	6.67E-05	8.85E-06

Allowable Emission Rates

Constituent	CAS No.	Emission Rates (g/sec) by Incinerator			
		LIC	DFS	MPF	DUN
Dibromochloromethane	124-48-1	3.42E-06	4.89E-06	6.98E-07	1.66E-06
(cis)1,3-Dichloropropene	542-75-6	1.62E-03	7.33E-07	6.98E-07	6.86E-04
(trans)1,3-Dichloropropene	542-75-6	3.42E-06	7.33E-07	6.98E-07	7.14E-07
Diethyl Phthalate	84-66-2	2.49E-04	9.93E-06	6.67E-05	4.64E-05
Dimethyl Phthalate	131-11-3	1.77E-03	4.23E-04	1.35E-03	1.85E-04
Ethylbenzene	100-41-4	9.92E-06	2.25E-05	1.64E-06	6.18E-06
HMX	2691-41-0		2.55E-06		5.95E-07
Methyl chloroform	71-55-6	1.66E-04	1.22E-04	1.65E-06	2.84E-05
Methyl ethyl ketone	78-93-3	1.18E-03	7.33E-04	1.58E-04	2.37E-04
Methyl isobutyl ketone		2.21E-05	7.33E-07	6.98E-07	7.87E-06
Methylene chloride	75-09-2	3.76E-02	1.20E-02	1.38E-04	9.40E-03
Naphthalene	91-20-3	6.24E-05	1.30E-05	6.67E-05	4.86E-06
Nitroglycerine	55-63-0		5.28E-04		1.31E-04
Propylene dichloride	78-87-5	1.88E-03	7.33E-07	6.98E-07	7.96E-04
RDX	121-82-4		2.55E-06		5.95E-07
Styrene	100-42-5	5.64E-04	1.11E-04	5.24E-05	3.86E-04
Tetrachloroethylene	127-18-4	1.15E-05	7.33E-07	6.98E-07	1.93E-06
Toluene	106-88-3	2.11E-02	6.17E-03	4.15E-05	4.84E-03
Vinyl acetate	108-05-4	4.88E-06	7.33E-07	6.98E-07	1.11E-06
Vinyl chloride	75-01-4	2.95E-05	1.62E-06	5.65E-05	1.59E-05
Total xylene	1330-20-7	4.49E-05	1.58E-05	6.98E-07	6.04E-06
METALS					
Antimony	7440-36-0	1.29E-04	4.19E-05	1.19E-04	2.57E-05
Arsenic	7440-38-2	2.20E-04	4.19E-05	8.51E-05	3.57E-05
Barium	7440-39-3	1.77E-04	8.42E-05	2.35E-04	6.36E-05
Beryllium	7440-41-7	5.82E-05	6.21E-06	2.38E-05	8.45E-06
Boron	7440-42-8	6.34E-03	1.77E-03	2.29E-03	8.50E-04
Cadmium	7440-43-9	5.82E-05	1.87E-05	5.73E-05	1.57E-05
Chromium	7440-47-3	5.82E-05	4.04E-05	6.99E-05	2.33E-05
Cobalt	7440-48-4	7.28E-05	1.68E-05	5.94E-05	1.28E-05
Copper	7440-50-8	7.28E-05	5.39E-05	5.94E-05	1.40E-05
Lead	7439-2-1	3.03E-04	4.42E-04	1.45E-04	8.88E-05
Manganese	7439-96-5	9.45E-03	4.19E-03	1.56E-03	1.15E-03
Mercury	7440-97-6	6.19E-05	5.24E-06	4.28E-05	1.62E-05
Nickel	7440-02-0	3.81E-04	3.05E-05	1.38E-04	5.64E-05
Phosphorous	7440-14-0	4.10E-03	9.35E-04	1.16E-03	5.50E-04
Selenium	7782-49-2	8.85E-05	4.19E-05	7.23E-05	1.71E-05
Silver	7440-22-4	1.29E-04	1.68E-05	1.19E-04	2.57E-05
Tin	7440-31-5	4.57E-04	1.65E-04	1.19E-04	5.79E-05
Thallium	7440-28-0	5.82E-04	8.42E-06	1.19E-05	8.45E-05
Vanadium	7440-62-2	8.85E-05	4.19E-05	2.38E-05	1.72E-05
Zinc	7440-66-6	1.90E-03	8.42E-04	2.09E-04	3.70E-04
ACID GASSES					
Hydrogen Chloride		3.81E-02	1.16E-03	8.16E-03	5.04E-01
Hydrogen Fluoride		1.05E-01	1.66E-02	1.93E-02	1.49E-02

Allowable Emission Rates					
		Emission Rates (g/sec) by Incinerator			
Constituent	CAS No.	LIC	DFS	MPF	DUN
OTHER CONSTITUENTS					
Chlorine		4.57E-02	2.22E-02	2.57E-02	5.49E-03
Particulates		1.08E-01	1.81E-02	5.04E-02	5.51E-02

During the testing periods called shakedown, trial burn, and post-trial burn, the demilitarization facility must meet the above limits to be protective. The trial burns will test for these constituents and then use the more site specific trial burn results to use in a future risk assessment evaluation. The results of the future risk assessment evaluation (Post-Trial Burn Risk Assessment) may alter the above emission rates.

Emissions from the Brine Reduction Area and the from the Heating, Ventilation, and Air Conditioning stack have also been evaluated and included in the draft permit. (See Module V and permit condition II.O, respectively).

IV. SUMMARY OF BASIS FOR DRAFT PERMIT CONDITIONS

IV.A. State Jurisdiction and Federal Relationship Regarding the Hazardous Waste Permit

The Environmental Protection Agency Region 10 (EPA) granted final authorization to the State of Oregon to implement a hazardous waste program pursuant to the federal Resource, Conservation and Recovery Act (RCRA) regulations at Title 40 Code of Federal Regulations Part 271. (40 CFR Part 271). This final authorization was granted on November 28, 1995 (Vol. 60 Federal Register 58520).

This means that a hazardous waste permit issued by the Environmental Quality Commission and the Department of Environmental Quality [DEQ] is solely implemented and primarily enforced by the DEQ. Without the final hazardous waste program authorization to DEQ, many of the permit conditions would have been joint authority with EPA, and EPA would have been a co-signer.

As EPA does have responsibility and authority to oversee the authorized State program, EPA may comment on the draft permit and enforce conditions in the permit in accordance with procedures found at 40 CFR Part 271.

IV.B. Description of Different Type of Permit Conditions

There are three general types of permit conditions. First, some permit conditions may be simple reiterations of specific state regulations. Such "boilerplate" language is commonly used in Module I (Standard Conditions) of the draft hazardous waste permit.

The second type of permit condition is a reference to a specific attachment to the permit or specific portion of the hazardous waste Part B application. The attachments and Part B application have been provided in response to the state requirements for necessary information that indicates compliance with the regulations. The attachments and Part B application have been closely reviewed by the Department to ensure that they are administratively complete and technically adequate. The review process began in October 1986 with the first Part B submittal and since that time there has been five notice of deficiencies (NODs) issued by the Department with five response to NODs from the Army to update the Part B application. The Department has determined that the information is complete such that draft permit conditions can be written.

The third type of permit condition is that with the broad authority of 40 CFR §270.32(b)(2), adopted as Oregon rule at OAR 340-100-002, the Department can require any permit condition which it determines is necessary to protect human health and the environment. This is typically known as the "omnibus provision."

IV.C. Discussion of Draft Hazardous Waste Permit Conditions

Below are discussions of the draft permit conditions. Each Module of the draft hw permit is discussed. There is a "General Condition" discussion that describes the activity regulated by the Module. "General Conditions" will usually be permit conditions taken from the 40 CFR or OAR 340 regulations either verbatim, or with specific language that directs the Permittee what to do to be in compliance with the regulation.

Following the "General Condition" section will be a "Specific Condition" discussion that will list some specific permit conditions and the justification for their need to be in the permit. Many times, their inclusion is based on the Department's view that the condition is needed for protection of human health and the environment under the omnibus authority.

Module I • Standard Permit Conditions

General Conditions

Module I is standard conditions found in most, if not all, hazardous waste permits in the country. These are permit conditions required for all hazardous waste permits in accordance with 40 CFR Part 270, as adopted as Oregon rule. Some of these general permit conditions serve as the legal framework for how the permit is implemented, and some serve as general conditions, such as requiring the Permittee to operate the facility in a sound manner and to provide mitigation measures in events of unplanned releases to the environment. Other conditions establish the Department's right to inspect the facility and operations.

Specific Conditions

Permit Condition: **I.G.**

Issue: Permit Expiration

Discussion: Along with limiting the permit to the standard ten years (although it is expected that incineration of the stockpile will be less than ten years), the Department is including a limitation of 36,000 total operational hours and 6,000 operational hours per year. This condition comes from the Part B application submitted by the Army. Making it into a permit condition makes it clear that it is a imposed limitation of operating time.

Permit Condition: **I.N.v.**

Issue: Require the Army to provide a remote computer monitoring station.

Discussion: The Department is requiring the Army to provide a remote computer monitoring station to more effectively monitor and inspect operations at the Umatilla Chemical Demilitarization facility (UMCDF). The computer monitoring station will monitor temperature and waste feed rates to the various incinerators.

Permit Condition: **I.R.**

Issue: Requirement to submit third-party certification that facility was built in accordance with the approved permit and application, along with the authority for the Department to inspect the facility to ensure compliance with the permit.

Discussion: This is an important permit condition to note because it provides documentation to be placed in the administrative record that the facility was built in compliance with the permit. Further, the condition allows the Department to inspect the facility for itself for compliance. Both the third party and Department review is necessary before the facility can begin storage and treatment activities.

Module II • General Facility Conditions Permit Conditions

General Conditions

"General facility conditions" apply to all hazardous waste management facilities, although the specific terms of the permit conditions will vary from one facility to another. These conditions should be designed to satisfy the general 40 CFR Part 264 regulations (as adopted as Oregon rule). Some general facility regulations require specific permit conditions for the Permittee to follow to be in compliance. Many of the permit conditions refer to either attachments or to the hazardous waste Part B application which has been reviewed by the Department. The general facility permit conditions address the following items:

- Design and operation of the facility
- Required notices
- General waste analysis
- Security
- Preparedness and prevention conditions
- Contingency plan
- Manifest system
- Recordkeeping and reporting

- Inspection requirements
- Requirements for ignitable, reactive, or incompatible wastes
- Closure requirements
- Personnel training

Specific Conditions

Permit Condition: **II.B.**

Issue: Prohibition to accept off-site waste and prohibition to send material off-site with detectable quantities of chemical agent.

Discussion: The Department conducted a risk assessment based on the quantities of chemical agent stored at the Umatilla Depot. The draft hazardous waste permit is issued based on the information that the amount stored at the Depot, when incinerated in accordance with the plans in the Part B application, create emissions protective of human health and the environment. Incinerating other wastes would invalidate the results of risk assessment. Therefore, the Department to insure that one of the most important assumptions of the risk assessment is kept valid, namely the amount of hazardous waste to be treated, is placing a permit condition that no hazardous waste generated off-site can be accepted.

The Department also wishes to insure that no chemical agent leaves the UMCDF facility. Even though neither the hazardous waste Part B application or anything stated by the Army indicates there is an intention to ship Depot material contaminated with chemical agent off-site, the Department views it as prudent that a permit condition specify this in order that Oregon's environment is not at risk.

Permit Condition: **II.C.4. and II.C.5.**

Issue: Requirement to submit further waste analysis reports.

Discussion: The Department has reviewed the waste analysis plans submitted by the Army and has concluded that there is an adequate amount of information in order to issue a draft permit for public comment. However, the Department is cognizant of two efforts to further refine properties of thermally treated metal parts at the Army's chemical testing facility in Utah, and to further characterize, among other things, liquid agent that is fed into the liquid incinerators (namely, identify the nature of impurities in GB). The further waste characterization is being developed between the Army and the State of Utah. The Department believes it is prudent to add permit conditions requiring submitting results of these Army efforts and specify that Department approval is required as to ensure that the UMCDF operations can adequately treat the waste.

Permit Condition: **II.H.4.**

Issue: Need for Department approval to determine that elements of the contingency plan are in-place before normal operations can begin.

Discussion: The importance of having the permit's contingency plan before normal operations is obvious because such operations require preventative and responsive measures. This importance is manifested by knowing that Congress created the Chemical Stockpile Emergency Preparedness and Prevention program (CSEPP). For this very important part of the permit, namely the contingency plan and the facility's readiness to implement it, and as it relates to CSEPP activities, the Department views it as necessary and prudent to review compliance with the contingency plan before normal operations (see Module VII of the draft hazardous waste permit) are begun. In the event there is non-compliance with readiness to implement the contingency plan, the Department would not only have the authority to issue a notice of non-compliance, but have the authority to withhold operation until compliance is determined. Before the Department would issue its approval, it is contemplated that the Department would consult with federal, state, local, and Army officials to determine if the off-site nature of the contingency plan provides adequate protection. The need to address off-site contingency , mainly because the lethality of chemical agent makes it prudent to incorporate it into the permit using the omnibus authority. On-site provisions of the contingency plan must be in-place at all times.

Permit Condition: **II.H.5.**

Issue: Requirement to submit a workplan implementing a monitoring program at the perimeter and to account for unplanned fugitive emissions of chemical agent.

Discussion: The Department has gone on record in the notice of deficiency process that an outside-the-UMCDF monitoring program that could detect unplanned fugitive chemical agent emissions needed to be implemented. The Army is currently developing this program, but its specifics could not be submitted before the planned issuance of the draft permit. Therefore, the Department is allowing for this program to be a compliance item.

In discussions with the Army, it was determined that the Army's goal was to set up a perimeter monitoring program to have a historical record of whether agent was released off-depot. The Department believes that a monitoring program should also account for fugitive emissions before any potential plume would reach the perimeter. This would allow for a more timely response. The permit condition as drafted directs the Permittee to develop such a monitoring program.

Permit Condition: **II.M.**

Issue: Liability coverage required pursuant to ORS 466.105(5)

Discussion: This permit condition is added in the event that another Permittee is added to the permit. In the eventuality that a Permittee is not covered under federal exemptions, then the statute requires proper liability be approved by the Department.

Permit Condition: **II.N.**

Issue: Requirement for a Post-Trial Burn Risk Assessment

Discussion: In order to decide if the proposed operation at the UMCDF would be protective of human health and the environment, the Department conducted a risk assessment in order to proceed with issuing a draft permit for public comment. The results of the risk assessment, called a Pre-Trial Burn Risk Assessment (PreRA) indicate that operations as proposed are protective of human health and the environment.

The Department believes that to validate the findings of the PreRA, there is a need for a Post-Trial Burn Risk Assessment (PostRA). The PostRA would take the previous years meteorological data (garnered from the on-site meteorological station) and use site-specific trial burn data to more accurately assess the risk (the PreRAused screening-type conservative emission estimates). The results from the trial burns, as used in the PostRA, will aid the Department in modifying the permit to insure emission limits are protective of human health and the environment.

Permit Condition: **II.O.**

Issue: Management of Carbon Filters at The Heating, Ventilation, and Air Conditioning (HVAC) Unit

Discussion: In discussions with the Army, the Department is aware of the Army's position that the management of the carbon filters, as stated in the draft permit conditions, may be too onerous. These conditions were intentionally inserted into the draft permit not because they provide the optimum management of the carbon filters, but because they serve as protective conditions until the time the administrative record has enough information to show that other management methods are protective.

The Department is aware of the carbon filter issues being discussed at other chemical stockpile sites, especially at the State of Utah. Upon resolution of those issues at Utah, and with the appropriate Department review and approval, it is fully expected and encouraged that the Army submit these specific details as a permit modification. Until such time, the carbon filter management as specified in the draft permit conditions stand as placeholders, and allow for protective measures to allow that a draft permit be issued for public comment. Inclusion of these permit conditions are base on the authority of 40 CFR 270.32(b)(2), as adopted as Oregon rule at OAR 340-100-002.

Module III • Container Storage

General Conditions

Module III lists the conditions the Permittee must abide by for management of containers in the Container Handling Building (CHB, or "Chub"). The permit standards for containers are found in 40 CFR 264 Subpart I, as adopted by Oregon rule at OAR 340-100-002.

The UMCDF site shall be permitted for one container storage area, divided into two parts designated as the East and West Storage Areas which are part of the Container Handling Building. The CHB shall be limited to the storage of munitions and various munition components containing chemical agents, explosives, propellants, and bulk containers containing chemical agents.

Munitions will be stored in large stainless steel on-site transport containers (ONCs) which are resistant to leaks due to fires, drops, and collisions. The permitted container storage area has conveyor tracks that route the ONCs to the Munitions Demilitarization Building (MDB) for demilitarization processing. Secondary containment for the permitted area of the CHB is provided by the CHB sump and trenches and by the bermed portion of the CHB floor.

Specific Conditions

None of significance.

Module V • Tank Systems

General Conditions

The permit conditions in Module IV are based on the permit standards of 40 CFR 264 Subpart J, as adopted by OAR 340-100-002.

This Module describes the Tank Systems at the Umatilla Chemical Agent Disposal Facility. There are three permitted tank systems at the UMCDF site. These three tank systems include: the Agent Collection Tank System, Spent Decontamination Holding Tank System and the Brine Surge Tank System. A tank system generally consists of holding tanks and/or surge tanks, containment sumps or trenches, pumps, associated piping and any ancillary equipment. Tanks are required to have secondary containment.

Specific Conditions

None of significance.

Module V • Miscellaneous Treatment Units

Module V is for the Brine Reduction Area (BRA) which under Oregon hazardous waste regulations would fit the definition of miscellaneous treatment unit (also known as a subpart X unit). The permit standards are found at 40 CFR 246 Subpart X, as adopted by Oregon rule at OAR 340-100-002.

The standards in 40 CFR Subpart X appear different than regulations for other types of hazardous waste units, such as tanks or incinerators. Subpart X regulations require that the Department choose among the regulations for other types of units, and if applicable, incorporate those regulations into permit conditions. The BRA units resemble both tanks and a boiler and industrial furnace. The BRA unit will not be treating chemical agent.

The BRA units include six miscellaneous treatment units. These six treatment units are: three evaporator packages (each evaporator package consists of one flash evaporator and one heat exchanger and three drum dryers). The Brine Reduction Area miscellaneous treatment units listed above have two major treatment objectives: (1) reducing the brines and wastewaters from the pollution abatement system by removing the water by at least 80% by weight and (2) assuring that the brine salt residues have no free liquids.

The Department conducted a risk assessment where emissions from the BRA unit were evaluated. Like the incinerator units, the BRA unit shall undergo a "trial burn" but is referred to instead as a performance test (see draft permit condition V.A.4). The results of the performance test will be included in the Post-Trial Burn Risk Assessment (see permit condition II.N.)

Specific Conditions

None of significance.

Module VI • Incineration for the Shakedown, Trial Burn, and Post-Trial Burn Periods

General Conditions

Module VI lists the draft permit conditions that the Permittee must follow during the shakedown, trial burn, and post-trial burn periods. These are the periods of time after construction of the facility but before full-scale processing (called normal operations, see Module VII). These periods allow for the proper testing and verification that the incineration units, as constructed and installed to permit conditions, can safely operate and meet emission limits protective of human health and the environment.

The shakedown period consists of where the incinerators are brought to the level of normal operating conditions in preparation for the trial burn.

The trial burn period is that time during which burns are conducted so that performance can be tested over a range of conditions for each incinerator.

The post-trial burn period is the time from when the data collected during the trial burn is evaluated, approved, and the permit modified. During this time, the facility may operate under conditions specified by the permit. Upon approval of the trial burn data and the permit is modified, the facility then moves from the post-trial burn period into normal operations period and complies with the modified permit conditions.

Specific Permit Conditions to Note

Permit Condition: **VI.A.1.**

Issue: Construction and installation of the five incinerators.

Discussion: The permit conditions that fall under VI.A.1. are those that require the Permittee to construct, install, and maintain the incinerators according the design plans found in the Part B application.

Permit Condition: **VI.A.3.**

Issue: The requirement to add a monitoring system for total organic carbon (TOC).

Discussion: The Department notes that the regulations only spell out the need to monitor at the stack and analyze for carbon monoxide (CO) and typically oxygen (O_2) and hydrogen chloride (HCl), as well as measuring organic compounds used to determine the destruction and removal efficiency (DRE) of the incinerator. However, to better assess the emissions from the incinerators, the Department is using its omnibus authority to require TOC testing.

The Department conducted a risk assessment in accordance with EPA guidance (*Exposure Assessment Guidance for RCRA Hazardous Waste Combustion Facilities, EPA-530/R-94/021, April 1994)* to determine protective emission rates. The EPA guidance specifies that to account for unidentified compounds, which are products of incomplete combustion (PICs), it is appropriate to measure TOC and upward adjust the known mass.

Because the draft permit requires that a Post-Trial Burn Risk Assessment, the Department concludes that it is necessary to account for PICs, and to do so will require the measurement of TOC. Without evaluating PIC formation and emission could underestimate the potential for harmful emissions.

Permit Condition: **VI.A.5.vii and VII.A.5.iii.**

Issue: The requirement to stop waste feed if any emission limit for any organic, metal, acid gas, chlorine, or particulate is exceeded.

Discussion: The Department conducted a risk assessment and determined protective emission rates. The main purpose of the risk assessment is to determine, if at specified emission limits, the normal incineration operation is protective of human health and the environment; and if found protective, the Department can proceed with draft permit issuance.

Another purpose that the risk assessment serves is to limit the operations at the demilitarization facility at the specified emission limits. However, because several constituents were evaluated as being emitted at the same time and therefore being totaled together for the risk, the Department considered the possibility that an exceedance of one constituent, along with a corresponding lower emission rate from another constituent, would still achieve an acceptable risk.

The Department concludes that it is appropriate to have the Permittee notify the Department of any exceedance of a constituent's emission limit from any incinerator. Upon such notification, the Department shall review the information submitted and if an unacceptable risk is posed, the Department has the authority to have the Permittee stop waste feed operations until corrective action is implemented and at that time the Department would, in writing, allow operations to resume.

If emission rates or waste feed rates must be changed in the permit, it is expected that a permit modification would be needed.

Permit Condition: **VI.B.2., VI.C.2., VI.D.2., and VI.E.2.**

Issue: Limiting waste feed rates during the post-trial burn period to the incinerators, which is after trial burns but before final modification of permit conditions to reflect results of the trial burn report from the Department.

Discussion: 40 CFR 270.62(c) provides for permit conditions including, but not limited to allowable feed rates to allow operations after trial burns but before final modification of permit conditions to reflect results of the trial burn report from the Department. The Department chooses to allow lower than maximum feedrates based on the amount of information that has been submitted, reviewed, and approved by the Department. (See the above permit conditions for specific feedrates).

Rates of 50%, 75%, and 100% will be approved by the Department based on review of preliminary trial burn data that must indicate compliance with the regulatory performance standards and that emission levels meet acceptable risk levels as were previously determined in the risk assessment conducted by the Department.

Permit Condition: **VI.C.3.iv.**

Issue: The requirement to notify the Department and develop an analysis and procedure if a munition must be processed through the metal parts furnace with more than 5% heel (that is, more than 5% by volume of the casing residual chemical agent).

Discussion: Metal material going through the metal parts furnace will be processed within the parameters of the trial burn, usually with less than 5% of residual heel. However, the administrative record indicates some instances of gelled agent not allowing for proper draining and leaving more than a 5% heel.

Metal material contaminated with chemical agent must be processed within the parameters of the trial burn (munition drained to no more than 5% residual heel). This is important because the metal material processed intended for scrap recycling. To insure that potentially contaminated recyclable metal shall be thoroughly treated, the Department crafted draft permit conditions to require notification and analysis and procedures to show that any metal material will meet a '5X' agent-free criteria to allow recycling.

Permit Condition: **VI.D.3.v. and vi; VII.D.3.iii and VII.D.4.iv.**

Issue: Specific condition regarding the need to spray the rocket shear blade with liquid for cooling and spark prevention.

Discussion: These conditions are an example of what is referred to as "lessons learned." "Lessons learned" simply means that if an incident, or a better procedure occurs at another facility, such improvements will be implemented at the other demilitarization sites.

At Johnston Atoll, an M55 rocket exploded and jammed feed gates to the DFS have occurred. The U.S. Army designed the corrective action which now requires the rocket shear blade to be sprayed, and different lock out procedures for the gates are in place. For such specific "lessons learned" that are important, the Department will incorporate these, and others in the future, into the permit.

Permit Condition: **VI.F.5.**

Issue: Requirement to submit and engineering design to install a "staggered" agent detection monitoring system at the common stack to allow for more frequent sampling.

Discussion: The Department notes that the continuous emission monitors at the stack for chemical agent has a turnaround testing rate of five (5) to ten (10) minutes, depending on the agent. A staggered system of monitors would allow one monitor to collect a sample while the other monitor would be reporting the previous test. This would allow for two tests per 5 to 10 minutes interval resulting in samples being reported every 2½ to 5 minutes.

In case of an agent release, this extra up front reporting would allow for a quicker response for waste feed cut-offs and for the emergency personnel which would help mitigate the potential damage from a chemical release.

Module VII • Incineration - Normal Operation

General Conditions

Module VII are permit conditions for the incinerator during the period after the trial burn results have been reviewed, approved, and implemented by a permit modification. The permit conditions, as expected, appear similar to Module VI, with the exception that many numbers have asterisks (*). These asterisks are meant to show that these a numbers that could change based on results of the trial burn and Post-Trial Burn Risk Assessment.

Specific Conditions

See Module VI above. Some permit conditions between the two modules are similar and discussed above.

Module VIII • Corrective Action for Solid Waste Management Units

General Comments

All hazardous waste permits must include corrective action requirements that direct the Permittee to remediate all hazardous waste releases from past practices. In the case of the Umatilla Army Depot Activity, all such releases are being addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or otherwise known as Superfund).

When remediation actions are address under CERCLA, the statute states that no other states permits are required, but that their cleanup standards are incorporated. The Department has a very active participation in the Depot remediation to ensure that appropriate Oregon standards are implemented. The CERCLA cleanup agreement in incorporated into the hazardous waste permit by reference. This would mean that non-compliance with the CERCLA cleanup would also be non-compliance with the permit.

What this Module does require is that any future discovery of a past practice unit that may release hazardous waste or hazardous constituents, not already contemplated by the Umatilla Records of Decision, would be remediated by the Permittee under the authority of the permit.

V. DESCRIPTION OF PROCEDURES FOR REACHING A FINAL PERMIT DECISION

The provisions of Oregon Revised Statutes 466, Oregon Administrative Rule (OAR) Chapter 340 and 40 CFR Part 124 (as adopted by OAR 340-100-002) describe how the hazardous waste permit is administratively processed. The DEQ has determined that sufficient information has been provided by the U.S. Army that a draft permit can be issued for public comment. The following steps are required to complete the permit process:

- The DEQ has prepared a Draft Permit for public comment. The comment period will last for 73-days from April 5 to June 17, 1996. The comment period may be extended by the Environmental Quality Commission or the DEQ. For locations of where to find more information, see Section VI of this Fact Sheet.

- During the 73 day comment period, anyone may submit written comments to the DEQ at the addresses listed in Section VI. Any person wishing to comment at a Public Hearing will have an opportunity to do so. Notification has been sent, via direct mail, to the addressees on the DEQ maintained Umatilla mailing list as specified at 40 CFR 124.10(c), as adopted by OAR 340-100-002. In addition, a Public Notice of the opportunity to comment on the Draft Permit and announcing the Public Hearing will appear in three regional newspapers on April 5, 1996. Public service announcements will be read on the air from radio stations in the Hermiston, Pendleton, Tri-Cities, and Portland areas.

  The Public may comment also on findings which must be made by the Environmental Quality Commission before the permit is issued, as specified in Oregon Revised Statute 466.055 and 466.060. These findings address siting considerations, need for treatment, protection of public health and safety, and best available technology for treating or disposing of hazardous waste

- Public Hearings are scheduled for the following date, time, and locations listed below. The Public Hearings, which allow for testimony to be placed in the Administrative Record and to address the ORS 466.055 and ORS 466.060 criteria, will have Open Houses beforehand to allow for an informal question and answers period:

May 13, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
Pendleton Convention Center
1601 Westgate
Pendleton, OR

May 29, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
World Trade Center
121 SW Salmon Street
Portland, OR

May 14, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
Kennewick High School Cafeteria
500 S. Dayton
Kennewick, WA

June 10, 1996
5:00-7:00 p.m. (Open House)
7:00-9:00 p.m. (Public Hearing)
Hermiston Community Center
415 Highway 395 South
Hermiston, OR

- Written comments must be presented to the DEQ by 5:00 p.m., June 17, 1996. The mailing address is Brett McKnight, DEQ Eastern Region, 2146 N.E. Fourth Street, Suite 104, Bend, OR 97701.

- All written comments received by the DEQ during the comment period and during the Public Hearings regarding the draft hazardous waste permit will be responded to in writing and will

be considered prior to the final decision regarding permit issuance. Comments addressing the ORS 466.055 and 466.060 will be compiled and brought before the EQC.

- If comments received by the DEQ result in significantly different permit conditions, another draft permit will be issued for at least an additional 45 day comment period.

- The EQC will review data and the comments pertaining to ORS 466.055 and 466.060. The EQC shall then schedule an agenda item for an announced EQC meeting that will make findings according to ORS 466.055 and 466.060.

- If the EQC makes affirmative findings that the proposed facility meets the ORS 466.055 and 466.060 criteria, then the Commission, in consideration of any comments raised during the public comment period and the Public Hearings, will issue a final permit decision. The effective date of the permit decision will be directed by the EQC.

- Procedures to appeal the final permit decision will be directed by the Commission upon final issuance of the permit decision.

VI. WHERE TO FIND ADDITIONAL INFORMATION

The complete Administrative Record, consisting of the Permit Application, Draft Permit, Fact Sheet, and all documents relating to the Draft Permit may be reviewed at the DEQ Eastern Region Bend Office located at 2146 N.E. Fourth Street, Suite 104, Bend, Oregon 97701, (541) 388-6146. Office hours are 8:00 a.m. to Noon and 1:00 p.m. to 5:00 p.m. Monday through Friday. The building is accessible by wheelchair. Those with special needs should alert this office when making an appointment. Contact Debbie Jacky at the above number, extension 250.

A copy of the Permit Application, Draft Permit, Fact Sheet, and Pre-Trial Burn Risk Assessment (a supporting document) can be found at the following locations:

DEQ Hermiston Office
256 E. Hurlburt, Suite 117
Hermiston, OR 97838
(541) 567-8297

Hermiston Public Library
235 E. Gladys Avenue
Hermiston, Oregon 97838
(541) 567-2882

Portland State University Library
951 SW Hall
Fifth Floor
Portland, OR 97204
(541) 567-2882

DEQ Bend Office
2146 NE 4th Street
Bend, OR 97701
(541) 388-6146 ext 250

A copy of the Draft Permit, Fact Sheet, and Pre-Trial Burn Risk Assessment (a supporting document) can be found at the following locations:

Mid Columbia Library
(Kennewick Branch)
405 S. Dayton
Kennewick, WA 99336
(509) 586-3156
or 1-800-572-6251

Pendleton Public Library
214 North Main
Pendleton, OR 97801
(541) 276-1881

Questions regarding the draft hazardous waste permit may be directed to either Sue Oliver in the DEQ Hermiston office or Fredrick Moore in the DEQ Bend office.

Sue Oliver
DEQ Hermiston Office
256 E. Hurlburt, Suite 117
Hermiston, OR 97838
(541) 567-8297

Fredrick Moore
DEQ Bend Office
2146 NE 4th Street
Bend, OR 97701
(541) 388-6146 ext. 242

PERMIT

for the
Storage and Treatment of Hazardous Waste

State of Oregon
Department of Environmental Quality
2146 N.E. 4th St., Suite 104
Bend, Oregon 97701

Telephone: (541) 388-6146

Issued in accordance with the applicable provisions of Oregon Revised Statutes Chapter 466 and the regulations promulgated thereunder in Oregon Administrative Rules Chapter 340 Divisions 100 through 120.

ISSUED TO:

PERMITTEE:

Umatilla Army Depot Activity
Hermiston, OR 97838-9544
Telephone: (541) 564-5200

This permit is effective as of *place date here*, and shall remain in effect until *place date here*, unless revoked and reissued (40 CFR §270.41), terminated (40 CFR §270.43), or continued in accordance with 40 CFR §270.51.

ISSUED BY:

ENVIRONMENTAL QUALITY COMMISSION

[ ]
Chairman

Date _____

DEPARTMENT OF ENVIRONMENTAL QUALITY

Langdon Marsh
Director

Date _____

Stephanie Hallock
Eastern Region Administrator

Date _____

All federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

TABLE OF CONTENTS

INTRODUCTION

Permittee: Umatilla Army Depot Activity

Environmental Protection Agency Identification Number: OR6 213 820 917

Pursuant to Oregon Revised Statutes Chapter 466 and the hazardous waste regulations promulgated thereunder by the Oregon Environmental Quality Commission in Chapter 340 of the Oregon Administrative Rules (OAR), this permit is issued to Umatilla Army Depot Activity (Permittee), to operate a hazardous waste treatment and storage facility located in Umatilla County in Hermiston, Oregon, off Interstate Hwy-84 at exit 177 at latitude 45° 50′ 30″ and longitude 119° 26′ 00″.

The Permittee must comply with all terms and conditions set forth in this permit and in Attachments 1 through 4. The Permittee must comply with all applicable state regulations, including OAR 340 Divisions 100-120, and the rules of the Public Utility Commissioner, the Workers' Compensation Department, State Health Division, and other state agencies having jurisdiction over the facility.

In some cases, within the Attachments of this permit, the Permittee has included references to exhibits or other attachments which are not physically contained in this permit. In such cases, the Permittee must still comply with the procedures of those referenced documents, even though they are not physically contained in this permit. The Permittee must maintain a set of such referenced documents at the facility.

The Permittee must maintain any documents at the facility which are referenced in any condition of this permit, even though such referenced documents may not be physically contained in the permit. The Permittee shall comply with the procedures and specifications of those referenced documents to the extent necessary to remain in compliance with the conditions of this permit.

The Permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time, shall be grounds for the termination or modification of this permit

and/or initiation of an enforcement action, including criminal proceedings. The Permittee must inform the Regional Administrator of any deviation from permit conditions or changes in the information on which the application is based which would affect the Permittee's ability to comply, or actual compliance, with the applicable regulations or permit conditions or which alters any condition of this permit in any way.

The Department shall enforce all conditions of this permit. Any challenge to any permit condition, shall be appealed as directed by the Environmental Quality Commission.

This permit may later, after the effective date of this permit, be modified to incorporate permit conditions which are based on federal regulations promulgated under the Hazardous and Solid Waste Act(HSWA), but has not yet been included in the state's authorized hazardous waste program. Such a modification shall not be a joint decision with the US Environmental Protection Agency (US EPA).

The US EPA shall maintain an oversight role of the state authorized program and, in such capacity, shall enforce any permit condition based on state requirements if, in the EPA's judgment, the Department should fail to enforce that permit condition, except that in no case shall the EPA enforce any permit condition which is broader in scope than the federal RCRA program. See 40 CFR 271.19.

LIST OF ACRONYMS

ACAM	Automatic Continuous Air Monitoring System
AOC	Area of Concern
ASC	Allowable Stack Concentration
ASME	American Society of Mechanical Engineers
AWFCO	Automatic Waste Feed Cutoff
BRA	Brine Reduction Area
CAMDS	Chemical Agent/Munition Disposal System(located in Utah)
CDC	Center for Disease Control
CEM	Continuous Emissions Monitor
CHB	Container Handling Building
CSDP	Chemical Stockpile Disposal Program
DAAMS	Depot Area Air Monitoring System
DFS	Deactivation Furnace System
DRE	Destruction and Removal Efficiency
DUN	Dunnage Incinerator
FFA	Federal Facilities Agreement
GFE	Government Furnished Equipment
HEPA	High Efficiency Particulate Air
HHS	Health and Human Services
HSWA	Hazardous and Solid Waste Amendment
HWMU	Hazardous Waste Management Unit
JACADS	Johnston Atoll Chemical Agent Disposal System
LIC	Liquid Incinerator
MDB	Munitions Demilitarization Building
MPF	Metal Parts Furnace
ONC	On-site Storage Container
OAR	Oregon Administrative Rules
ORS	Oregon Revised Statutes
PAS	Pollution Abatement System
PIC	Products of Incomplete Combustion
POHC	Principal Organic Hazardous Constituents
QAPP	Quality Assurance Project Plans
QA/QC	Quality Assurance/ Quality Control
RA	Risk Assessment
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RHA	Residue Handling Area
SDS	Spent Decontamination Solution
SOP	Standard Operating Procedure
SWMU	Solid Waste Management Unit
TC	Toxicity Characteristic
TCLP	Toxicity Characteristic Leaching Procedure
TMA	Toxic Management Area
TSD	Treatment, Storage, Disposal
TWA	Time Weighted Average
UMCDF	Umatilla Chemical Demilitarization Facility
UMDA	Umatilla Depot Activty

LIST OF ATTACHMENTS

The following documents are modified excerpts from the Permittee's RCRA Part B permit application. The listed documents are hereby incorporated, and made part of this permit. The Department has modified specific language in the Attachments. These incorporated Attachments are enforceable conditions of this permit, as modified by the specific permit conditions. Specific permit conditions (Module I. through VIII), supersede the language of Attachment if the permit condition and attachment language and found the be in conflict.

Attachment 1 Part A Application

Attachment 2 Waste Analysis Plan

Attachment 3 Inspection Schedule

Attachment 4 Contingency Procedures for Munition Drainage

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 in accordance with 40 CFR §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 Disposal Facility (UMCDF). The Permittee is allowed to accumulate hazardous waste onsite for less than 90 days pursuant to 40 CFR §262.34 within the Umatilla Army Depot Activity. The Permittee is also allowed to continue permitted storage of hazardous waste in containers in Building 203 and interim status in K-Block and J-Block igloos until final permit determinations are made and/or interim status is terminated. Any other treatment, storage, or disposal of hazardous waste not authorized in this permit, by 40 CFR §262 or any other Resource Conservation and Recovery Act (RCRA) permits 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 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 future regulatory changes to include those requirements promulgated under 40 CFR §268 restricting the placement of hazardous wastes in or on the land. Issuance of this permit does not convey property rights of any sort nor any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations.

I.B. DEFINITIONS

All Definitions contained in 40 CFR Parts 124, 260-264, 270, and OAR 340-100-010 are hereby incorporated by reference into this permit, except that any of the definitions used above 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:

"Active life" This term shall mean the time period between receipt of hazardous waste at the hazardous waste management site and certification of closure of the hazardous waste management site.

"Agency" This term shall mean the U.S. Environmental Protection Agency, Region 10.

"Agent free" This term shall mean the condition of a material that, after being analyzed for all chemical agents, is determined to have chemical agent concentrations below the lowest achievable detection limits as specified by test methods APCA-SR-S SOP No. ELS-2(GB),3(HD),3(HD) and APCA-SR-S SOP No. ELS-4(VX) for liquids. All solid material must meet the "5X" and "3X" criteria, as appropriate.

"Area of concern" (AOC) This term shall mean any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Department to pose a current or

potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act in order to ensure adequate protection of human health and environment.

"Application" — This term shall mean the hazardous waste Part B permit application dates February 1995 and updated with change pages on March 21, 1996.

"Contamination" — This term shall mean the presence of any hazardous constituent in a concentration which exceeds the naturally occurring concentration of that constituent in the immediate vicinity of the facility.

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

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

"Chemical Stockpile Disposal Program (CSDP)" — This term shall mean the program created by the Department of Defense to comply with the Treaty requiring the United States to dispose of all of their stockpile of unitary chemical weapons.

"Daily"	This term shall mean every calendar day except non-watse treatment weekends and holidays that do not exceed three (3) consecutive days.
"Department"	This term shall mean the Oregon Department of Environmental Quality, (with the address as specified on page one of this permit).
"Director"	This term shall mean the Director of the Oregon Department of Environmental Quality (DEQ) or a designated representative.
"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.
"Facility"	This term shall mean the physical description of the Umatilla Army Depot property (including structures, appurtenances, and improvements) under the control of the owner or operator seeking a permit under Subtitle C of RCRA. For the purposes of implementing corrective action it includes all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.
"Government furnished equipment (GFE)"	This term shall refer to Hazardous Waste Management Unit (HWMU) equipment that will be delivered to the site as a pre-fabricated assembly.
"Hazardous Waste"	This term shall mean substances that meet the

definition of hazardous waste found in ORS 466.005(7), 40 CFR Part 261, OAR 340.101.

"Hazardous constituent" This term shall mean those substances 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.

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

"Inspector" This term shall mean the designated representative of the "Manager" delegated routine facility oversight.

"Interim Measures" This term shall mean actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants while long term corrective action remedies are evaluated and, if necessary, implemented.

"Land Disposal" This term shall mean the placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

"Landfill" This term shall mean any disposal facility or part of a facility where hazardous waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground

injection well, a salt dome formation, a salt bed formation, an underground mine, or a cave.

"Manager" — This term shall mean the manager of the DEQ hazardous waste program.

"Normal operating period" — This term shall mean the period following successful completion of all chemical agent trial burns and the site-specific risk assessment based on the trial burn data and will continue until the site treats the last shipment of waste prior to beginning closure operations.

"Operating day" — This term shall refer to a twenty four (24) hour period during which operation occurred for any length of time.

"Operating record" — This term shall mean records kept in a written format within the Umatilla Chemical Demilitarization Facility with the exception of required continuous monitoring data 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.

"Permit" — This term shall mean the joint permit issued by the Oregon Department of Environmental Quality, pursuant to ORS 340 Divisions 105 and 106.

"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 Regional Administrator of the Oregon Department of

Environmental Quality, Eastern Region.
[See OAR 340-100(10)(y)]

"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.

"Remote computer monitoring station" — This term shall mean all necessary equipment, including terminal and all telecommunications hardware and software necessary to provide a computer monitoring station within the Department for unrestricted twenty-four (24) hour access to key UMCDF site operating data and emissions monitoring data.

"Site" — This term shall mean that it includes, but is not limited to, any permitted treatment, storage or disposal activity that may be comprised of one or more hazardous waste management units.

"Solid waste" — The term shall mean any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded materials, including solid, liquid, semisolid, or contained gaseous materials resulting from industrial, commercial, mining, and agriculture operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under Section 402 of the

	Federal Water Pollution Control Act, as amended (86 Stat. 880) or source, special, nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).
"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 management units. 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.
"Standard 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 that it includes the tank(s) and all primary and secondary sumps, pumps, valves, and associated piping and any other appurtenances.
"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.

"Weight of Batch Processed" — This term shall mean initial weight of brine in surge tank, weight of tank/heel sludge left in brine surge tank.

I.C. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR §§270.41, 270.42, 270.43, and OAR 340 Divisions 105 and 106. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition except as provided in 40 CFR §§270.41, 270.42, 270.43, and OAR Divisions 105 and 106.

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 permit condition does not affect the validity of any other State of Oregon or federal statutory or regulatory basis for said condition. [40 CFR §124.16(a)]

I.E. DUTY TO COMPLY

The Permittee must comply with all permit conditions except to the extent and for the duration such noncompliance is authorized by an emergency permit (issued under 40 CFR §270.61 or OAR 340-105-061). Any permit noncompliance, other than noncompliance authorized by an emergency permit constitutes a violation of the applicable provision of Oregon state law and/or RCRA, as amended by HSWA, and is grounds for enforcement action, permit termination, modification or revocation and reissuance of the permit or denial of a permit renewal application.

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, in accordance with 40 CFR §270.30(b). The Permittee shall submit such permit application at least 180 days prior to the expiration date of this permit, in accordance with 40 CFR §270.10(h).

I.G. PERMIT EXPIRATION

This permit and all conditions therein shall be effective for ten years from the effective date of this permit.

Total operating time for the UMCDF site shall be no more than 36000 hours, with no more than 6000 operational hours for each incinerator in any consecutive twelve month period.

I.H. CONTINUATION OF EXPIRING PERMIT

This permit 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 Subpart B and OAR Chapter 340 Division 105), and through no fault of the Permittee, the Department has neither issued nor denied a new permit on or before the expiration date of this permit. (40 CFR §270.50 and 40 CFR §270.51)

I.I. OBLIGATION FOR CORRECTIVE ACTION

Owners or operators of hazardous waste management units must have all necessary permits during the active life (including the closure period) of the unit, and for any period necessary to comply with the corrective action requirements (HSWA section) of this permit. The corrective action obligations required by this permit will continue regardless of whether the facility continues to operate or ceases operation and closes. The facility is obligated to complete facility-wide corrective action regardless of the operational status of the facility.

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 permit conditions. (40 CFR §270.30(c))

I.K. DUTY TO MITIGATE

In the event of noncompliance with the permit, the Permittee shall take all reasonable steps to minimize releases to the environment resulting from the noncompliance, 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

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 to achieve compliance with the permit conditions. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures (QAPP) to include following standard operating procedures (SOPs). This provision requires the operation of back-up or auxiliary equipment or similar systems only when necessary to achieve compliance with the permit conditions. (40 CFR §270.30(e))

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 records required to be kept by this permit. (40 CFR §270.30(h))

I.N. INSPECTION AND ENTRY

Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the employees of the Department or their authorized representative to (40 CFR §270.30(i)):

i. Enter at reasonable times the Permittee's premises where the regulated facility or activity is located or conducted; or where records must be kept under the permit conditions;

ii. Have access to and copy, at reasonable times, any records that must be kept under the permit conditions;

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 any substances 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.

v. The Permittee shall provide all the necessary equipment to the Department for the installation and maintenance of a compatible remote computer monitoring station, including terminal and all telecommunications hardware and software necessary to provide the Department unrestricted twenty-four (24) hour access to key UMCDF site operating data and emissions monitoring data.

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 of the wastes 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))

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

I.O.2. The Permittee shall retain records at the facility of all monitoring information, including all calibration and maintenance records, 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 (3) years from the date of the sample, measurement, report or record or for periods elsewhere specified in this permit. The Permittee shall retain, at the Facility, all monitoring records from all surface water sampling, seep sampling, soil sampling, sediment sampling, groundwater monitoring wells, and associated groundwater surface elevations 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)):

i. The date, exact place, and time of sampling or measurement;

ii. The individual(s) who performed the sampling or measurements;

iii. The date(s) analyses were performed;

iv. 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.

I.O.5. The Permittee may substitute analytical methods which are equivalent to those specifically approved for use in this permit in accordance with the following:

i. The Permittee submits to the Manager a request for substitution of an analytical method(s) which is equivalent to the method(s) specifically approved for usein this permit. The request shall provide information demonstrating that the propsed method(s) is equal or superior to the approved analytical method(s)in terms of sensitivity, accuracy, and precision (i.e., reproducibility); and

ii. The manager notifies the Permittee in writing, that the substitution of the analytical method(s) is approved. Such approveal shal not require a permit modification.

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 such planned physical alterations or additions to the areas on the UMDA Facility. (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 UMDA Facility or activity which may result in noncompliance with permit requirements. Advanced notice shall not constitute a defense for any noncompliance. (40 CFR §270.30(l)(2))

I.R. CERTIFICATION OF CONSTRUCTION OR MODIFICATION

I.R.1. The Permittee may not commence storage or treatment of hazardous waste in any new unit including Government Furnished Equipment (GFE) at the UMDA Facility until the Permittee has submitted to the Department, by certified mail or hand delivery, a certification of construction signed by the Permittee and an independent, registered professional engineer stating that the unit has been constructed in compliance with the permit and applicable regulations, and

i. The Department has inspected the modified or newly constructed unit or facility and finds it is in compliance with the conditions of the permit; or

ii. The Department has either waived the inspection or has not within 15 days notified the Permittee of its intent to inspect.(40 CFR §270.30(1)(2))

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

i. As built drawings;

ii. Descriptions and delineation of any changes to proposed drawings;

iii. All required professional certifications;

iv. All quality assurance/quality control documentation (QA/QC); and

v. All required physical testing results.

I.R.3. Construction certification shall be provided for the following UMCDF site hazardous waste management systems and units:

Brine Storage Tank System
Spent Decontamination Holding Tank System
Agent Collection Tank System
Liquid Incinerators and Pollution Abatement System
Metal Parts Furnace and Pollution Abatement System
Deactivation Furnace and Pollution Abatement System
Dunnage Incinerator and Pollution Abatement System
Brine Reduction Area Subpart X Units and Pollution Abatement System (including Drum Dryers, Flash Evaporators and Heat Exchangers)
Container Handling Building
Demilitarization Machines by Systems
HVAC System (including carbon filter systems)
Pollution Abatement System Carbon Filters

I.S. TRANSFER OF PERMIT

This permit shall be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to OAR 340-105-040. Prior to transferring ownership or operation of the permitted UMDA Facility during its operating life, 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), 264.12(c))

I.T. COMPLIANCE SCHEDULES

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date. (40 CFR §270.33)

I.U. TWENTY-FOUR HOUR REPORTING

I.U.1. The Permittee shall verbally report to the Regional Administrator any noncompliance with this permit which may endanger human health or the environment. Any such information shall be reported as soon as possible, but not later than twenty-four (24) hours from the time the Permittee becomes aware of the noncompliance.

I.U.1.i. Potential endangerment to human health and the environment shall include, but not be limited to, noncompliance with permit condition II.A.1.

I.U.1.ii. Potential endangerment to human health or the environment shall include, but not be limited to, 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 stack for the Dunnage Incinerator, 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 Facility boundary or at any of the Facility monitoring perimeter 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, exceeding the TWA specified in Table 1-1 of this permit as measured by at 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 facility boundary but outside the MDB, exceeding the TWA specified in Table 1-1 of this permit, as measured by any chemical agent monitor.

I.U.1.iii. Potential endangerment to human health or the environment shall include any non-confirmed 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 non-confirmed stack emission level that indicates a release to the atmosphere, if the stack emission levels have not been verified as a chemical agent monitor anomaly (i.e., false positive) within that same four hours.

I.U.2. In accordance with 40 CFR §270.30(1)(6)(i)(A)(B), the immediate and twenty-four (24) hour verbal report required in permit condition I.U.1. shall include, but not be limited to, the following:

i. Information concerning the release of any hazardous waste which may endanger public drinking water supplies;

ii. Any information of a release or discharge of hazardous waste, or of a fire or explosion at the UMDA Facility, which could threaten the environment or human health; and

iii. A description of the release or discharge and its cause including at a minimum:

a. Name, title, and telephone number of individual reporting;

b. Name, address, and telephone number of the owner or operator;

c. Name, address, and telephone number of the UMDA Facility;

d. Date, time, and type of incident;

e. Location and cause of incident;

f. Name and quantity of materials involved;

g. The extent of injuries, if any;

h. An assessment of actual or potential hazard to the environment and human health, where this is applicable;

i. Description of any emergency action taken to minimize threat to human health and the environment;

j. Estimated quantity and disposition of recovered material that resulted from the incident; and

k. 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 verbal notification, as specified in permit conditions I.U.1. through I.U.2., the Permittee shall provide to the Department a written submission in accordance with 40 CFR §270.30(1)(6).

I.U.3.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 (include cause, location, extent of injuries, if any, and an assessment of actual or potential hazard to the environment and human
health outside the UMDA Facility, where this is applicable) of the incident (noncompliance and/or release);

c. The period(s) in which the incident (noncompliance and/or release) 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, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and/or the steps taken or planned to adequately clean up the release.

I.U.3.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 conditions I.U.1. through I.U.2.

I.V. OTHER NONCOMPLIANCE

The Permittee shall report to the Manager and the Administrator all other instances of noncompliances not reported under Permit Conditions I.Q., I.R., I.S., I.T., and I.U. at the time monitoring reports are submitted. The reports shall contain the information required by 40 CFR §270.30(1)(10).

I.W. OTHER INFORMATION

If the Permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application, permit modification request, or in any report to the Department, such facts or information shall be promptly submitted by the Permittee (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. The Permittee shall also promptly provide the Department all incident reports generated at any other Chemical Stockpile Disposal Program (CSDP) Facility within three days of the incident being reported to the Program Manager for the Umatilla Chemical Demilitarization Facility. For purposes of this permit, incident shall mean verbal or written.

I.X. SIGNATORY REQUIREMENT

All applications, reports or information required by this permit, or otherwise submitted to the Department, shall be signed and certified by the Umatilla Army Depot Commander, or by a duly authorized representative of that person in accordance with 40 CFR §270.11.

I.Y. CONFIDENTIAL INFORMATION

Any information submitted by the Permittee to the Administrator or to the Director, Manager, or Inspector may be claimed as confidential by the Permittee in accordance with the applicable provisions of OAR 340-100-003.

I.Z. REPORTS, NOTIFICATIONS, AND SUBMISSIONS

I.Z.1. All reports, notifications, or other submissions which are required by this permit to be sent or given to the Department should be sent by certified mail, express mail, or hand delivered to:

Regional Administrator
Oregon Department of Environment Quality
2146 N.E. 4th St., Suite 104
Bend, Oregon 97701

Phone: (541) 388-6146
FAX: (541) 388-8283

I.AA. DOCUMENTS TO BE MAINTAINED AT THE UMDA FACILITY

The Permittee shall maintain at the Facility, until closure is completed and certified by an independent, registered 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 and this permit.

ii. Inspection schedules and logs (Attachment 3 of this permit), as required by 40 CFR §264.15(b)(2) and this permit.

iii. Personnel training documents and records, as required by 40 CFR §264.16(d)and this permit.

iv. Contingency Plan (Volume X, Section G of the Application), as required by 40 CFR §264.53(a) and this permit.

v. Operating record, as required by 40 CFR §264.73 and this permit.

vi. Closure Plan, as required by 40 CFR §264.112(a) and this permit.

vii. Copy of this permit, permit attachments, current permit application and the current permit application attachments.

viii. Construction certification and as built drawings for the UMCDF Site Hazardous Waste Management Units identified under I.R.3.

ix. Independent tank system assessment, installation, and repair certifications; as required by 40 CFR §264.192(g).

I.BB. ATTACHMENTS

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

If any section of the application is found to be in conflict with any condition in this permit, the condition will take precedence.

If any section of the application is found to be in conflict with any Attachment to this permit, the attachment to this permit will take precedence.

TABLE 1.1 CHEMICAL AGENT EXPOSURE LIMITS AND CHEMICAL AGENT STACK LIMITS

CHEMICAL AGENT CONCENTRATIONS (mg/M^3)			
Location	VX	GB	HD
Maximum Allowable Instantaneous Stack Concentration[1,2]	0.0003	0.0003	0.03
General Population Limit[1,3] (Averaging Time: 72 hours)	0.000003	0.000003	0.0001
Work-place Time Weighted Average[1,3] (Averaging Time 8 Hours)	0.00001	0.0001	0.003

[1] 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 (CDC).

[2] The Department of Army proposed the maximum allowable stack concentrations 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.

[3] The March 15, 1988 Federal Register (53 FR 8504) [corrected in 53 FR 11002, April 4, 1988], announced that CDC concluded that the concentrations indicated in Table 1-1 will adequately protect human health; "even long-term exposure to these concentrations would not create any adverse health effects."

NOTE: CDC determined that the current available data precluded acceptable exposure limits for mustard agent being precisely defined. CDC concluded that the work-place limits will amply protect a general population 1000 meters or more from the demilitarization site or transportation route. Therefore, protection of the general public is dependent upon meeting the work-place limits within the facility.

MODULE II - GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY

II.A.1. The Permittee shall design, construct, maintain, and operate the permitted sites at the UMDA Facility 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 all hazardous waste management units in accordance with the approved designs and specifications that are included in the Application, except for minor changes deemed necessary by the Permittee to facilitate proper construction of the hazardous waste management units. 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. After completion of construction of each hazardous waste management unit, the Permittee shall submit final as-built drawings and the narrative report to the Department as part of the construction certification documentation specified in Condition I.R. of this permit.

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

1. The Permittee is not authorized to accept; and therefore, shall not receive hazardous waste generated outside the UMCDF site.

2. The Permittee shall not send any material or waste off-site that has detectable amounts of GB, VX, and HD. Only material or wastes meeting the agent-free 3X or 5X criteria may be sent off-site.

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 procedures described in the Waste Analysis Plan, included as Attachment 2 of this permit.

II.C.2. The Permittee may not accept an unidentified waste for storage or treatment until it has been completely characterized and this permit has been modified.

II.C.3. The Permittee shall utilize the methods of the Waste Analysis Plan, in Attachment 2 of this permit, for the analysis of any of the wastes listed in the Part A Application, in Attachment 1 of this permit.

II.C.4. The Permittee shall verify that the metal scrap generated from the operation of the DFS, DUN, and MPF (subjected to 1000°F for at least 15 minutes) is agent free, either through testing at the Chemical Agent/Munition Disposal System (CAMDS), the Department of Army's Johnson Atoll Chemical Agent Disposal System (JACADS), or at the UMCDF site. Until verification results are accepted as valid by the Department the metal scrap shall be managed as hazardous waste. The Department shall notify the Permittee in writing that the verification results have been accepted as valid.

II.C.5. The Permittee shall submit an updated Waste Analysis Plan as a permit modification in accordance with 40 CFR §270.42 upon receipt of the agent purity/waste characterization database and Tooele Chemical Demilitarization Facility (TOCDF) waste analysis issues being resolved or within sixty (60) days of the effective date of this permit condition.

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 Volume IX, Section F-1 of the Application. The map of the UMCDF site depicting the location of fencing and gates for the UMCDF site and the entire UMDA Facility is located in Volume I, Section B Figures B-2-2 and B-4-1 of the Application.

II.E. GENERAL INSPECTION REQUIREMENTS

II.E.1. The Permittee shall comply with all requirements under 40 CFR §264.15 (a) and (b) (1) 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 for each permitted hazardous waste management site as required by 40 CFR §264.15(d).

II.E.4. The permittee may make only the following changes to the inspection plan without first obtaining a permit modification:

i. Upon certification of closure of an individual waste management unit, any portion of the Inspection Plan specific to the operation of that unit may be deleted from the Inspection Plan, Attachment 3 of this permit.

ii. The Permittee may add inspection parameters to an existing inspection form, table, or figure in cases where such additional parameters will result in a more comprehensive or detailed Inspection Plan.

iii. The Permittee may create additional inspection forms, tables, or figures to address inspection parameters for equivalent or superior replacement equipment which must be routinely inspected.

II.F. TRAINING PLAN

II.F.1. The Permittee shall ensure that all personnel who handle hazardous waste are trained in hazardous waste management, safety procedures and emergency procedures, as applicable to their job description in accordance with 40 CFR

§264.16 and by following the outlines and procedures in Volume XII, Section H of the Application.

II.G. PREPAREDNESS AND PREVENTION

II.G.1. The Permittee shall follow the preparedness and prevention procedures in Volume IX, Section F and Volume II, Sections D-1a, D-1f, D-1g, D-1j, and D-2 of the Application and Table D-1-13 located in Volume II, Section D-1 of the Application.

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. 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

II.H.1. The Permittee shall follow the procedures and schedules outlined in the Contingency Plan, in Volume X, Section G of the Application.

II.H.2. If chemical agent is detected by the 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 , in Volume X, Section G of the Application, perform a staged shutdown of all incineration operations at the UMCDF site including waste feed cut offs, in accordance with the procedures specified in Volume II, Section D-5 through D-9 of the Application.

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 major

explosion, as designated in Volumes X through XI, Section G of the Application, unless the following has occurred:

II.H.3.i. The Permittee has submitted a request to resume operations to the Department accompanied by the following information:

a. Detailed description of the accident/incident;

b. The cause of the accident as determined by the results of investigation of the accident;

c. The corrective action(s) taken;

d. A copy of the notification received by the Permittee from the Program Manager for Chemical Demilitarization that operations are authorized to resume.

II.H.3.ii. The Department has provided the Permittee a written approval to resume operations.

II.H.4. The Permittee shall not commence normal operations of the UMCDF site pursuant to this permit until the Department determines the required elements of the Contingency Plan in Volume X and XI, Section G of the Application are in place. The Department determination shall be written and placed in the Administrative Record and will be addressed to the Permittee. [40 CFR 270.32(b)(2)]

II. H.5. The Permittee shall submit a permit modification request to propose a monitoring detection program within 260 days of the effective date of this permit condition. The goal of the monitoring program is to serve as a historical record of potential release from the UMCDF, provide detection monitoring and perimeter monitoring of releases from the UMCDF, and provide aid in assessing and potential plume migration. Such a monitoring detection program may, and should, include the potential release from stacks and areas

outside the MDB (e.g., HVAC), and storage of munitions, as might be required in the future by a storage permit issued by the Department.

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 or electronic operating record at the UMDA Facility, in accordance with 40 CFR §264.73(a) for all records identified in 40 CFR §264.73(b)(1) through (b)(12).

ii. The Permittee shall, by March 31 of each year, submit to the Department a certification pursuant to 40 CFR §264.73(a), signed in accordance with 40 CFR §264.73 (b)(9), that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and 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.

iii. The Permittee shall submit a biennial report covering the activities of each permitted hazardous waste management unit to the Department in accordance with 40 CFR §§262.41, 264.75, and 40 CFR §270.30(1)(9).

iv. The Permittee shall submit to the Department any additional reports specified in accordance with 40 CFR §264.77.

v. All reports, notifications, applications, or other materials required to be submitted to the Department shall be submitted at the address shown in Condition I.Z.1. of this permit.

vi. All reports, notifications, applications, or other materials required to be submitted to the Regional Administrator shall be submitted to the Hazardous

Waste Management Division Director at the EPA Regional address shown in Condition I.Z.2. of this permit.

II.J. *CLOSURE*

II.J.1. The Permittee shall amend the Closure Plan, included in Volume XII, Section I of the Application, in accordance with 40 CFR §264.112(c) and submit it to the Department for review and approval at least 180 calendar days prior to the date scheduled for commencing closure and whenever the Permittee finds it necessary to revise the Closure Plan. The amended Closure Plan must address, but not be limited to, sampling and closure procedures of surrounding soils that air dispersion modeling indicates potential deposition resulting in levels of hazardous constituents above background.

II.J.2. The Permittee shall not commence closure of any hazardous waste management unit without first receiving approval of the Closure Plan for that unit from the Department.

II.J.3. Within ninety (90) calendar days of the Permittee's receipt of the written approval from the Department for any hazardous waste management unit's Closure Plan, in accordance with 40 CFR §270.41 of the modified closure plan, the Permittee shall close the hazardous waste management unit in accordance with the approved plans.

II.J.4. The Permittee shall decontaminate or dispose of all UMCDF site equipment as specified in the Closure Plan included in Volume XII, Section I of the Application.

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 at the UMDA Facility. Compliance with 40 CFR §264.111 shall require closure of each hazardous waste management unit in accordance with Condition II.J. and the Closure Plan, included in Volume XII, Section I of the Application.

II.J.6. The Permittee shall provide certification statements upon completion of closure for each hazardous waste management unit when that hazardous waste management unit at the UMDA Facility has been closed in accordance with the applicable specifications in the Closure Plan, as required by 40 CFR §264.115.

II.J.7. For all hazardous waste management units, minor deviations from the permitted closure procedures necessary to accommodate proper closure shall be described in a narrative form with the closure certification statements. The Permittee shall describe the rationale for implementing minor changes as part of this narrative report. Within sixty (60) calendar days after completion of closure of each hazardous waste management unit the Permittee shall submit the certification statements and narrative report to the Department.

II.J.8. In the event that any hazardous waste management unit 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 the modified closure and post-closure plan for that hazardous waste management unit to the Department, as a permit modification request, in accordance with 40 CFR §270.41. 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, in accordance with 40 CFR §264.118(a).

II.K. FINANCIAL ASSURANCE FOR FACILITY CLOSURE

The Permittee is exempt from the closure financial assurance requirements, as specified in 40 CFR §264.143.

II.L. COST ESTIMATE FOR FACILITY CLOSURE

The Permittee is exempt from the cost estimate requirements in accordance with 40 CFR § 264.140(c).

II.M. LIABILITY REQUIREMENTS

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

The Permittee is exempt from the liability coverage for sudden and accidental occurrence requirements, as specified in 40 CFR § 264.140(c). If any Permittee is not a federal or state agency, the Permittee must provide liability insurance in accordance with ORS 466.105(5). The liability insurance will be reviewed and approved by the Department.

II.N. POST-TRIAL BURN RISK ASSESSMENT REQUIREMENTS

II.N.1. The Permittee shall submit for Department approval within 360 days after the effective date of this permit condition a Post-Trial Burn Risk Assessment Workplan that must, at a minimum, but not be limited to, address the following items:

i. Who will perform the Post-Trial Burn Risk Assessment (PostRA).

ii. What resources will be dedicated to perform the PostRA

iii. Describe the schedule to perform the RA

iv. Describe the status of submitting the PostRA protocol, as required by permit condition II.N.2., and in accordance with 40 CFR §270.33(a)(2).

v. Provide an operational history and data evaluation of the on-site meteorological station

II.N.2. The Permittee shall submit for Department approval, a PostRA protocol within 540 days within the effective date of this permit condition. The PostRA will address, at a minimum, but not be limited to, the following essential elements:

a. A protocol to address at a minimum, but not be limited to, the chemicals of potential concern (COPCs) that were determined to contribute at least 10% of the cancer and non-cancer risk as

determined in the Pre-Trial Burn Risk Assessment for the four human health scenarios and for the ecological assessment.

b. A protocol that assesses the potential incremental risk after each trial burn

c. A list of COPCs with updated toxicity and chemical values, to include those COPCs originally evaluated in the Pretrial Burn Risk Assessment, newly identified compounds, and mass of unidentified emissions.

d. A determination of the air dispersion model(s) to be used and the algorithms (equations, for example) to assess receptor exposure.

e. Trial burn/performance test stack and exit gas parameter

II.N.3. The Permittee cannot begin trial burn operations (except permit conditions VI.A.1 through VI.A.5) without receiving Department approvals in accordance with permit conditions II.N.1 and II.N.2.

II.N.4. The Permittee shall operate an on-site meteorological station to collect sufficient data in order to perform the Post-Trial Burn Risk Assessment until closure of the UMCDF.

II.O. CARBON FILTER OPERATION

II.O.1. The Munition Demilitarization Building (MDB) and Laboratory filter systems shall be monitored as follows:

i. Continuous chemical agent monitoring and data recording utilizing the ACAMS and the DAAMs will be performed between carbon banks 1 and 2, 2 and 3, 3 and 4, 4 and 5, 5 and 6, and in the filter stack. The ACAMS monitoring between carbon banks 1 and 2, 2 and 3, 3 and 4, and 4 and 5 will be conducted by a single ACAMS connected to a manifold that samples each location between carbon

banks sequentially. The ACAMS monitoring between carbon banks 5 and 6 and the filter stack will include a dual dedicated ACAMS which will alternate sampling and the analytical cycle times.

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

II.O.2. The MDB and Laboratory filter systems shall be maintained according to Table 2-2 of this permit.

II.O.3. All carbon banks shall be changed out prior to commencing a new chemical agent campaign.

II.O.4. Prefilters and high efficiency particulate air filters shall be changed when the pressure drop across the filter element exceeds 10-inch water column.

II.O.5. The MDB and Laboratory filter systems shall be leak checked in accordance with Army SOPs 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. Carbon banks and filter elements shall be leak checked whenever an element of the bank is installed, modified or replaced.

b. Carbon banks and filter elements shall be leaked checked at least semi-annually.

c. Carbon banks and filter elements shall be leak checked following painting or fire in ventilation area.

II.O.6. The heating, ventilation, and air conditioning stack that services the carbon filter operation must have an ACAMS monitor. The emissions from the carbon filter operation shall not exceed the following concentrations:

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

II.P. AIR EMISSION STANDARDS

II.P.1. GENERAL INTRODUCTION

Phase I Organic Air Emission Standards consist of 40 CFR Part 264, for hazardous waste treatment, storage, and disposal (TSD) facilities. Part 264.1032 and Part 265.1032 contain emission standards for process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that process hazardous waste with an annual average total organic concentration of at least ten (10) parts per million (ppm) by weight. Part 264.1058 contain emission standards that address leaks from specific equipment (i.e., pumps, valves, compressors, etc.) that contains or contacts hazardous waste that has a total organic concentration of at least ten percent by weight.

II.P.2. STANDARDS

i. Prior to constructing any equipment with process vents subject to the requirements of Part 264.1032 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 §270.421.[40 CFR Subpart AA]

ii. Prior to constructing any additional equipment subject to the requirements of Part 264, the Permittee shall supply the specific Part B information required pursuant to Part 270.25, and shall obtain a permit modification in accordance with the provisions of 40 CFR §270.42.[40 CFR Subpart BB]

iii. The Permittee shall comply with the organic air emission standards for equipment leaks in Part 264.1050 as applicable and as specifically set forth in Attachment 3 of this permit. [40 CFR Subpart BB]

iv. The permittee shall comply with the organic air emission standards for tanks and containers as set forth in 40 CFR Subpart CC. The Permittee shall obtain a permit modification to incorporate 40 CFR Subpart CC standards into the Part B application and the permit within 230 days after the effective date of this permit condition. [40 CFR §270.32(b)(2)]

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
Blast Gate Valves
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 Systems

Glove Box

Blast Gates/Doors

Blast Gate Valves

Mine Machine

Drain Station

Pushout Station

PROJECTILE AND MORTAR PROCESSING SYSTEMS

Computerized Process Control System Interlocks

Monorail with Lifting Device System

Conveyor Systems

Blast Gates/Doors

Blast Gate Valves

Projectile/Mortar Disassembly Machines

Multiposition Loader

Lift Station

Pick & Place Device

TON CONTAINER PROCESSING SYSTEM

Computerized Process Control System Interlocks

Monorail with Lifting Device System

Conveyor Systems

Bulk Drain Station

Lift Station

TABLE 2-2 CARBON CHANGEOUT SCHEDULE

CHEMICAL AGENT	DETECTION LEVEL	MONITOR LOCATION	BANKS TO BE REPLACED	TIME FRAME FOR BANKS REPLACEMENT
VX, GB Mustard	ABOVE TWA Above TWA	BETWEEN BANKS 1 AND 2	REPLACE BANKS 1 AND 2 OF THE AFFECTED CARBON FILTER UNIT	WITHIN 3 MONTHS OF DETECTION
VX, GB Mustard	ABOVE TWA Above TWA	BETWEEN BANKS 2 AND 3	REPLACE BANKS 1, 2,3 AND 6 OF THE AFFECTED CARBON FILTER UNIT	WITHIN 3 MONTHS OF DETECTION
VX, GB Mustard	ABOVE TWA Above TWA	BETWEEN BANKS 3 AND 4	REPLACE BANKS 1,2,3,4, AND 6 OF THE AFFECTED CARBON FILTER UNIT	SUSPENSION OF CHEMICAL AGENT PROCESSING BEING ADDRESSED BY THE FILTER UNIT AND IMMEDIATE REPLACEMENT
VX, GB Mustard	ABOVE TWA Above TWA	BETWEEN BANKS 4 AND 5, 5 AND 6	REPLACE ALL BANKS OF THE AFFECTED CARBON FILTER UNIT	SUSPENSION OF CHEMICAL AGENT PROCESSING BEING ADDRESSED BY THE FILTER UNIT AND IMMEDIATE REPLACEMENT
VX, GB Mustard	.2 ASC .2 TWA	FILTER STACK	REPLACE ALL BANKS OF THE AFFECTED CARBON FILTER UNIT	SUSPENSION OF CHEMICAL AGENT PROCESSING BEING ADDRESSED BY THE FILTER UNIT AND IMMEDIATE REPLACEMENT

MODULE III - CONTAINER STORAGE

The UMCDF site shall be permitted for one container storage area, divided into two parts designated as the East and West Storage Areas which are part of the Container Handling Building (Figure 3-1 of the permit). The Container Handling Building (CHB) shall be limited to the storage of munitions and various munition components containing chemical agents, explosives, propellants, and bulk containers containing chemical agents (hazardous waste numbers D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D030, D043).

The UMCDF site shall have two 90 day storage areas: the Residue Handling Area (RHA) within the Process and Utility Building and the Toxic Maintenance Area (TMA) in the Munitions Demilitarization Building. All containers in the RHA and TMA shall be managed in accordance with the generator requirements of Part 262.34 as less than 90 day storage areas.

Munitions will be stored in large on-site transport containers (ONCs) which are resistant to leaks due to fires, drops, and collisions. The permitted container storage area has conveyor tracks that route the ONCs to the Munitions Demilitarization Building (MDB) for demilitarization processing. Secondary containment for the permitted area of the CHB is provided by the CHB sump and trenches and by the bermed portion of the CHB floor.

III.A. CONTAINER HANDLING BUILDING DESIGN, CONSTRUCTION AND OPERATION

III.A.1. The Permittee shall design and construct the CHB as specified in:

i. All applicable drawings in Volume V, Attachment D-3 of the Application

ii. The applicable specifications found in Volume VI, Attachment D-3 of the Application.

III.A.2. The Permittee shall design and construct the secondary containment sump systems identified in Table 3-2 of the permit as specified in:

i. All applicable drawings in Volume V, Attachment D-3 of the Application;

ii. The applicable specifications found in Volume VI, Attachment D-3 of the Application; and,

iii. Table 4-4 of this permit.

III.A.3. The Permittee shall operate the CHB as specified in Volume II, Sections D-3(a) (2), (3), (4) and (5) of the Application.

III.B. PERMITTED AND PROHIBITED WASTE IN THE CHB STORAGE AREA

III.B.1. The Permittee shall only store the munitions containing the hazardous wastes listed in Table 3-1 of this permit in the permitted storage area of the CHB in accordance with the terms of this permit. Chemical munitions will be stored in the permitted storage area only when contained within an ONC with an exception to spray tanks which have their own shipping/overpack containers.

III.B.2. The 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 ONCs within the unloading areas, the conveyor corridor, or the lift areas of the CHB as designated in Figures 3-1 of this permit.

III.B.3. The Permittee shall not store more than 24 ONCs in the East or West Storage Areas or more than a total of 48 ONCs in the permitted storage area of the CHB at any one time.

III.B.4. The Permittee shall not exceed the maximum allowable number of munitions per individual ONC as specified below and shall not exceed the maximum allowable number of munitions in the permitted storage area of the CHB as specified below:

Munition	Maximum Allowable Munitions/ONC	Maximum Allowable Munitions/CHB
155 mm Projectile	72	3456
8" Projectile	36	1728
MC-1 Bomb(750 lb.)	4	192
M55 Rocket	30	1440
Mine (w/activators and fuses)	36	1728
Ton Container	2	96
Spray Tank	NA	16
MK-94 Bomb(500 lb.)	5	240

III.C. CONDITION OF ONCS

III.C.1. If an ONC holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if the ONC begins to leak, the Permittee shall transfer the ONC to the Toxic Maintenance Area (TMA) for immediate unloading of it's contents and complete decontamination prior to removal of the ONC from the TMA.

III.C.2. If an ONC has been found to be not in good condition as specified in permit condition III.C.1, the ONC shall not be used to transport

chemical agent containing munitions or ton containers until the defective ONC has been decontaminated, repaired and re-certified according to the manufacturer's specifications.

III.D. COMPATIBILITY OF WASTE WITH ONCS

The Permittee shall assure that the ability of the ONCs to contain the hazardous waste, munitions and ton containers is not impaired, in accordance with 40 CFR §264.172.

III.E. MANAGEMENT OF ONCS

III.E.1. The permittee shall deliver ONCs to the CHB only during daylight hours. ONCs containing leaking munitions will be processed before all other ONCs. The Permittee shall keep all ONCs closed during storage and transport. The Permittee shall not handle or store ONCs in a manner which may rupture the ONC or cause it to leak.

III.E.2. ONCs containing leaking munitions shall not be returned to K-Block for storage or accumulation without Department approval.

III.E.3. The Permittee shall not place any munition in an ONC that previously held chemical munitions in which a leak was detected unless the ONC has been completely decontaminated.

III.E.4. Any ONC that remains in the CHB longer than seven (7) days shall be tested for leaking munitions/ton containers, at least once every seven days from the date the ONC entered the permitted storage area of the CHB according to Attachment 3 of this permit and Volume III, Attachment D-2 of the Application.

III.E.5. The Permittee shall ensure that each ONC is clearly marked to identify its content and the date each period of accumulation began as specified in 40 CFR §268.50(a)(2)(i).

III.F. SECONDARY CONTAINMENT SYSTEM

III.F.1. The secondary containment system in the Container Handling Building shall consist of the bermed floor area, all sumps listed in Table 3-2 of this permit and any associated trenches.

III.F.2. The Permittee shall operate the secondary containment system in accordance with Volume IX, Section F of the Application.

III.F.3. Sealants and coatings for the secondary containment system will be chemical resistant epoxy as specified in Volume VI, Attachment D-3, Section D-4B-18 of the Application. The floor, sump and trenches located in the CHB will be inspected weekly according to permit condition III.G.

III.F.4. The Permittee shall consider any materials or liquids detected in the secondary sumps to be a 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 in the Waste Analysis Plan in Attachment 2 of this permit.

III.F.5. The Permittee shall send those liquids that are determined to be hazardous waste to a Spent Decontamination Holding Tank. Materials or liquids that are sampled and analyzed and found not to be hazardous waste may be managed as non-hazardous waste but must be evacuated from the sump according to permit condition III.F.6.

III.F.6. The Permittee shall remove all materials or liquids in the secondary containment sumps by either a vacuum truck or dedicated sump pump. The dedicated sump pump system may not leave a residual liquid depth of more than 3/4 inch. All sumps evacuated using a vacuum truck shall not leave pumpable residual liquids in the sump.

III.F.7. Operation of the sump level indicators shall be visually inspected per the Inspection Schedule in Attachment 3 of this permit and shall be tested upon installation, annually, and between every chemical agent change as specified in Attachment 3 of this permit.

III.G. INSPECTION SCHEDULES AND PROCEDURES

The Permittee shall inspect the CHB weekly to detect leaks from the ONCs and deterioration of the ONCs and/or the containment system caused by corrosion and other factors in accordance with the Inspection Schedule, in Attachment 3 of this permit. All inspection data shall be recorded and the records shall be placed in the operating record in accordance with permit condition II.1.

III.H. RECORDKEEPING

The Permittee shall document the results of all waste analyses and tests in the operating record, in accordance with permit condition II.I.

III.I. CLOSURE

At closure of the CHB area, the Permittee shall remove all hazardous waste and hazardous waste constituents from the CHB and the secondary containment system, in accordance with the procedures in the Closure Plan in Volume XII, Section I of the Application as revised in accordance with permit condition II.J.1.

III.J. REACTIVE WASTE

III.J.1. The Permittee shall take precautions to prevent accidental reaction of wastes as stated in Volume IX, Section F-5 of the Application.

TABLE 3-1 HAZARDOUS WASTES TO BE STORED IN THE PERMITTED AREA OF THE CONTAINER HANDLING BUILDING.

Description of Hazardous Waste	Oregon, EPA Hazardous Waste I.D. Numbers
Agent GB	D001-D011,D022,D028,D030,D043
Agent VX	D001-D011,D022,D028,D030,D043
Mustard Agent - HD	D001-D011,D022,D028,D030,D043
Explosives	D003
Propellants	D003,D030
Fuzes	D003
Detonators	D003,D005,D008
Squibs	D003,D008
Igniters	D003
Initiators	D003
Bursters	D003
Rocket Components	D003
Munition Body Components	D003
Mine Drums	D003

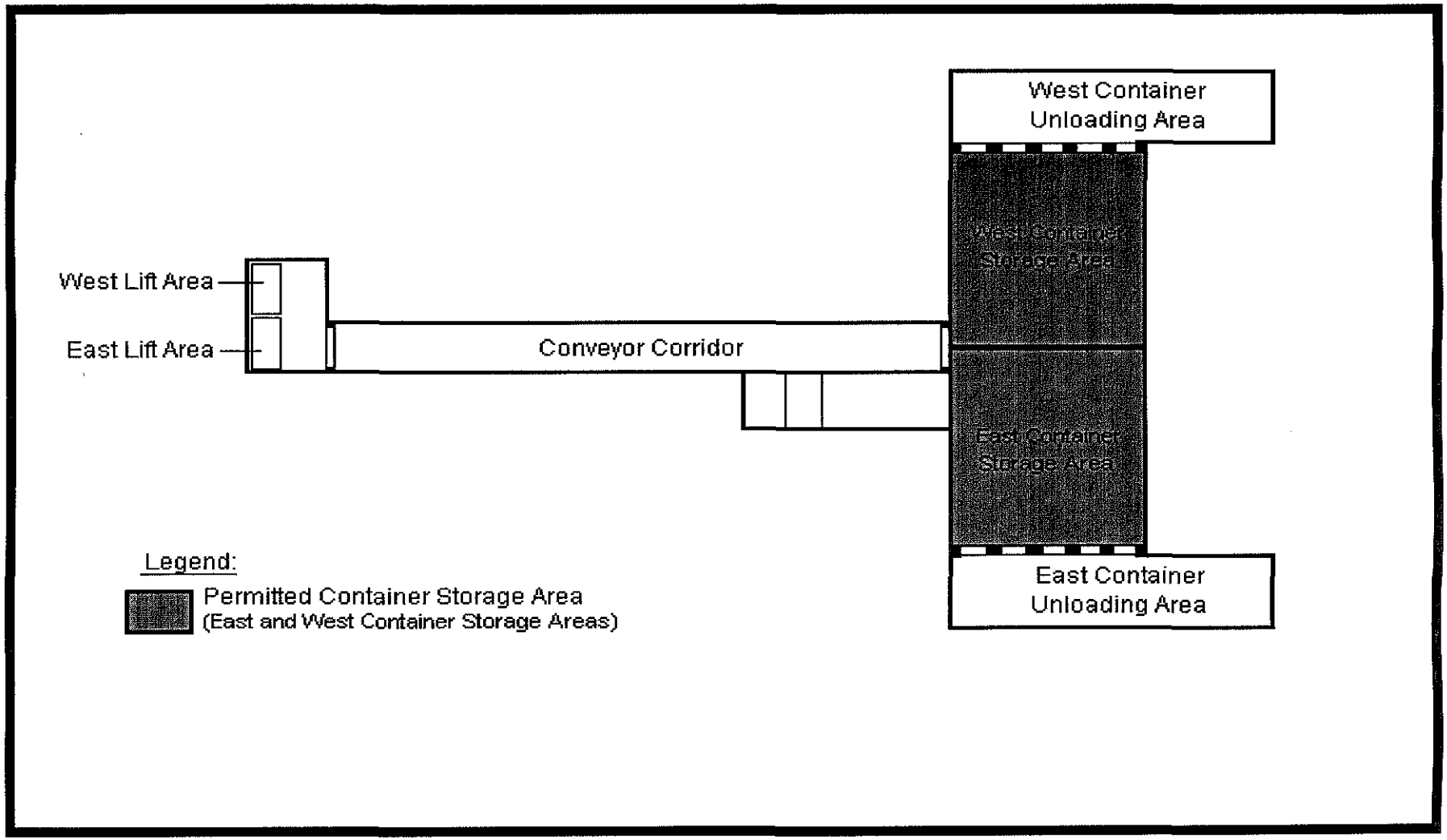
TABLE 3-2 HAZARDOUS WASTE SECONDARY CONTAINMENT SUMPS IN THE CHB

Sump I.D. Number[1]	Maximum Allowable Capacity (gallons)	Dimensions of Sump (feet)	Secondary Containment Volume (gallons)	Location Reference		
				Drawing Column-Row[2]	Floor	Room[3]
CHB-SUMP-101	85	2.25x2.25x2.25	none required	E-12.5	1	CHB EAST
CHB-SUMP-102	85	2.25x2.25x2.25	none required	E-2.2	1	CHB WEST

[1] CHB = Container Handling Building
[2] Reference building column-row numbers from Drawings UM-7-S-1 and UM-7-S-2.
[3] CHB WEST= Container Storage Building West Area, CHB EAST=Container Storage Building East Area.

CHB-SUMP-103	1196		none required	E-8	1	CHB EAST

FIGURE 3-1 PERMITTED STORAGE AREAS IN THE CHB



MODULE IV - TANK SYSTEMS

This Module describes the Tank Systems at the Umatilla Chemical Agent Disposal Facility. There are three permitted tank systems at the UMCDF site. These three tank systems (listed in Table 4-1 of this permit) include: the Agent Collection Tank System, Spent Decontamination Holding Tank System and the Brine Surge Tank System. A tank system generally consists of holding tanks and/or surge tanks, containment sumps or trenches, pumps, associated piping and any ancillary equipment.

IV.A. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

IV.A.1. Subject to the terms of this permit, 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 during Shakedown Periods I and II, Surrogate and Chemical Agent Trial Burn Periods, and Post Trial Burn Periods detailed in Module VI of this permit.

IV.A.2. Subject to the terms of this permit, the Permittee shall store only the specified hazardous wastes in the hazardous waste tank systems identified in Table 4-1 and 4-2 of this permit during normal operations detailed in Module VII of this permit.

IV.A.3. The Permittee is prohibited from storing hazardous wastes not listed in Table 4-1 of this permit in the hazardous waste tank systems listed in Tables 4-1 and 4-2 of this permit except as identified in permit condition I.A.

IV.B. TANK SYSTEM DESIGN AND CONSTRUCTION

IV.B.1. The Permittee shall design and construct the Agent Collection Tank System (ACS-TANK-101 and ACS-TANK-102), the Spent Decontamination Holding Tank System

(SDS-TANK-101, SDS-TANK-102, and SDS-TANK-103), the Brine Surge Tank System (BRA-TANK-101, BRA-TANK-102,BRA-TANK-201, BRA-TANK-202) as specified in:

i. All applicable drawings in Volume V, Attachment D-3 of the Application;

ii. The applicable specifications found in Volume VI, Attachment D-3, Section D-4b of the Application.

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

i. All applicable drawings in Volume V, Attachment D-3 of the Application;

ii. The applicable specifications found in Volume VI, Attachment D-3, Section D-4b of the Application; and

iii. 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 methods in Volume VI, Attachment D-3, Section D-4b of the Application.

IV.B.4. The Permittee shall not install any altered hazardous waste tank system until such time the Department has:

i. Received certification from an independent, registered 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 OAR 340-105-041 and 40 CFR §270.42.

IV.C. TANK SYSTEM INSTALLATION

IV.C.1. The Permittee shall install the Agent Collection Tank System (ACS-TANK-101 and ACS-TANK-102) and, the Spent Decontamination Holding Tank System (SDS-TANK-101, SDS-TANK-102, and SDS-TANK-103) in accordance with the installation specifications in Volume VI, Attachment D-3, Section D-4B-02 of the Application.

IV.C.2. The Permittee shall install the Brine Surge Tank System (BRA-TANK-101, BRA-TANK-102,BRA-TANK-201, BRA-TANK-202) in accordance with the installation specifications in Volume VI, Attachment D-3, Section D-4B-03 of the Application.

IV.C.3. The Permittee shall install the Primary Containment Sump Systems listed in Table 4-2 of this permit in accordance with the installation specifications in Volume VI, Attachment D-3, Section D-4B-03 of the Application.

IV.C.4. The Permittee shall obtain and submit to the Department within 30 days of completing installation of each tank system a written certification from an independent, qualified, installation inspector or an independent, qualified, registered professional engineer attesting 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:

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. Non-compliance reports and corrective action (including field waiver reports) and repair reports.

IV.C.5. The Permittee shall obtain and submit to the Department within 30 days of completing installation of each tank system a written certification from an independent, qualified, installation inspector or an independent, qualified, registered professional engineer attesting that proper installation procedures were used. The independent tank system installation certification documentation submitted to the Department for the Agent Collection Tank System (ACS-TANK-101 and ACS-TANK-102) and the Spent Decontamination Holding Tank System (SDS-TANK-101, SDS-TANK-102, and SDS-TANK-103), shall include, but not be limited to, the following manufacturing design, fabrication, and testing documentation:

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 credential;

ix. Non-compliance reports and corrective action;

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 within 30 days of completing installation of each tank system a written certification from an independent, qualified, installation inspector or an independent, qualified, registered professional engineer attesting that proper installation procedures were used. The independent tank system installation certification documentation submitted to the Department for the Brine Surge Tanks (BRA-TANK-101 and BRA-TANK-102,BRA-TANK-201, 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 non-destructive examinations;

vii. Qualifications of NDE inspectors;

viii. Non-compliance report and corrective action

ix. Leak test report;

x. Shop inspection reports; and

xi. Shop inspector credentials.

IV.C.7. The Permittee shall obtain and submit to the Department within 30 days of completing installation of each tank system a written certification from an independent, qualified, installation inspector or an independent, qualified, registered professional engineer attesting that proper installation procedures were used. The independent tank system installation certification documentation submitted to the Department for the Primary Containment System Sumps listed in Tables 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 UMDA Facility until such time that the tank system is certified closed in accordance with permit condition II.J.; and

ii. Provide the installation documentation by certified mail, express mail, or hand delivery to the Department within fifteen (15) days upon written request.

IV.C.9. Prior to operating a hazardous waste tank system for Shakedown Period I, the Permittee shall comply with permit conditions I.R., and IV.C.1. through IV.C.7.

IV.D. GENERAL OPERATING REQUIREMENTS

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 system(s), to rupture, leak, corrode, or otherwise fail.

IV.D.2. The Permittee shall operate the tank systems to prevent spills and overflows using the procedures and equipment described in Volume II, Section D-4 of the Application.

IV.D.3. The Permittee shall install 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.

IV.D.4. The Permittee shall install 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 quantity of each hazardous waste received, and the date of accumulation for each tank is recorded and maintained in the operating record as specified in 40 CFR §268.50 (a)(2)(ii).

IV.E. AGENT COLLECTION TANK SYSTEM OPERATING CONDITIONS

IV.E.1. The Agent Collection Tank system consists of the agent holding tank (ACS-TANK-101), the agent surge tank (ACS-TANK-102), agent tank secondary containment sump (MDB-Sump-134), pumps (ACS-Pump-102, and ACS-Pump-201), associated piping, and ancillary equipment.

IV.E.2. The Agent Surge Tank (ACS-TANK-102) shall not be used as a primary storage tank except in emergency situations.

IV.E.3. The carbon filters on the Agent Collection Tanks shall be changed out at least once every 30 operational days and this activity shall be recorded in the operating record. The spent carbon from the Agent Collection tanks shall be treated in the Dunnage Incinerator or the Metal Parts Furnace.

IV.F. SPENT DECONTAMINATION HOLDING TANK SYSTEM OPERATING CONDITIONS

IV.F.1. The Spent Decontamination Holding Tank System consists of three spent decontamination holding tanks (SDS-TANK-101, SDS-TANK-102, and SDS-TANK-103), primary containment sump (as listed in Table 4-2 of this permit), pumps (SDS-Pump-171, SDS-Pump-172, and SDS-Pump-173), trenches, associated piping, and ancillary equipment.

IV.F.2. The Permittee shall maintain a minimum of one Spent Decontamination Holding Tank (either SDS-TANK-101, SDS-TANK-102, or SDS-TANK-103) empty when chemical agent is being managed at the UMCDF site.

IV.F.3. The Permittee may utilize the empty tank specified in permit condition IV.F.2. in the event of a waste spill. (i.e., ACS-TANK-102 failure, Spent Decontamination Tank failure, munition overpack failure, etc.)

IV.F.4. The Permittee shall not process any munitions which have not passed the Explosive Containment Vestibule in the munition processing line at the time of a waste spill until such time that the circumstance(s) which resulted in the waste spill has been rectified and a minimum of one Spent Decontamination Holding Tank is empty, as specified in permit condition IV.F.2.

IV.F.5. The Permittee shall sample and analyze the waste in the Spent Decontamination Holding Tank System in accordance with the Waste Analysis Plan in Attachment 2 of this permit.

IV.G. BRINE SURGE TANK SYSTEM OPERATING CONDITIONS

IV.G.1. The Brine Surge system consists of four Brine Surge tanks (BRA-TANK-101, BRA-TANK-102,BRA-TANK-201, BRA-TANK-202), secondary containment sump, vault, pumps, associated piping, 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 sample and analyze the waste in the Brine Surge System in accordance with the Waste Analysis Plan in Attachment 2 of this permit.

IV.H. OPERATING PROCEDURES FOR PRIMARY CONTAINMENT SUMPS

IV.H.1. The Primary Sump shall consist of the sumps listed in Table 4-2 of this permit.

IV.H.2. The Permittee shall operate the Primary Sump System in accordance with Volume II, Section D-4 of the Application.

IV.H.3. Operation of the sump level indicators and interstitial probes shall be visually inspected per the inspection schedule in Attachment 3 of this permit and shall be tested upon installation, annually, and between every chemical agent change as specified in Attachment 3 of this permit.

IV.H.4. The Permittee shall remove the metal sump annually and before commencement of each chemical agent campaign to visually inspect for any signs of deterioration of the coatings, leakage or corrosion of the metal sump, or cracking of the concrete liner.

IV.H.5. All primary sumps shall have a dedicated sump pump and sump level indicators. All liquids evacuated from these sumps shall be pumped to the Spent Decontamination Holding Tanks.

IV.H.6. 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.H.7. After every chemical agent change, primary sumps shall be tripled rinsed with decontamination solution.

IV.I. OPERATING PROCEDURES FOR SECONDARY CONTAINMENT SUMPS

IV.I.1. The secondary containment sumps shall consist of all sumps listed in Table 4-3 of this permit.

IV.I.2. The Permittee shall operate the secondary containment sumps in accordance with Volume II, Section D-4 of the Application.

IV.I.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.I.4. The Permittee shall send those liquids that are determined to be hazardous waste to a Brine Surge Tank. For materials or liquids that are sampled and analyzed and found not to be hazardous waste, they will be managed as non-hazardous waste but must be evacuated from the sump.

IV.I.5. The Permittee shall remove all materials or liquids in the secondary sumps by either a vacuum truck or dedicated sump pump. 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 not leave any residual liquids in the sump.

IV.I.6. Operation of the sump level indicators shall be visually inspected per the inspection schedule in Attachment 3 of this permit and shall be tested upon

installation, annually, and between every chemical agent change as specified in Attachment 3 of this permit.

IV.J. RESPONSE TO LEAKS OR SPILLS

IV.J.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. 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 of the detection of the leak to prevent further release and allow inspection and repair of the system. If the Permittee finds that it will be impossible to meet this time period, the Permittee shall notify the Department and demonstrate that the longer time period is required.

iii. If the collected material is a hazardous waste, it shall be managed in accordance with all applicable requirements of 40 CFR Parts 262-264.

iv. 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: (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 specified in Volume XII, Section I of the Application 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 an aboveground portion of the ancillary equipment that does not have secondary containment, the Permittee shall repair the tank system or ancillary equipment before returning it to service.

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.J.2. For all major repairs to eliminate leaks or restore the integrity of the tank system, the Permittee shall obtain a certification by an independent, qualified, registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner; repair of a ruptured tank; or, repair or replacement of a secondary containment vault.

IV.J.3. 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 tank systems to use.

IV.K. INSPECTION SCHEDULES AND PROCEDURES

IV.K.1. The Permittee shall inspect the tank systems, in accordance with the Inspection Schedule specified in Attachment 3 of this permit.

IV.K.2. The Permittee shall inspect the overfill controls, in accordance with the schedule in Inspection Plan in Attachment 3 of this permit.

IV.L. RECORDKEEPING AND REPORTING

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 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.L.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 Condition I.U.2., 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 (including soil composition, geology, hydrogeology, and climate);

iii. Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet this time 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;

iv. Proximity of downgradient 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 UMDA Facility, 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.6.

IV.L.5. The Permittee shall keep on file at the UMDA Facility, the written hazardous waste tank system assessments in accordance with 40 CFR §264.191(a) 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.6.

IV.L.6. The Permittee shall maintain at the UMDA Facility a record of the results of leak tests and integrity tests conducted, in accordance with permit conditions IV.C.4. or IV.J.2.

IV.L.7. In the event that a hazardous waste tank (including primary containment sumps) exceed 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 cutoff.

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 (i.e., the working capacity)).

IV.L.8. The Permittee shall document compliance with permit conditions IV.L.2. and IV.L.3. and place this documentation in the operating record for the UMCDF site.

IV.L.9. The Permittee shall document and record the results of each Spent Decontamination Holding Tank System waste analysis required by permit condition IV.F.5. in the Operating Record specified in permit condition II.I.1.i.

IV.L.10. The Permittee shall document and record the results of each Brine Surge Tank System waste analysis and any subsequent treatment required by permit condition IV.G.3. in the Operating Record specified in permit condition II.I.1.i.

IV.M. CLOSURE

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, included as Volume XII, Section I of the Application.

IV.M.2. If the Permittee demonstrates that not all contaminated soils can be practically removed or decontaminated, at closure, the Permittee shall comply with the permit condition II.J.8.

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

IV.N.1. Six (6) months prior to the initiation of each Liquid Incinerator's shakedown period I, as specified in permit condition VI.B., the Permittee shall submit to the Department, by certified mail, express mail, or hand deliver, for approval, documentation that demonstrates the surrogate waste designated in permit condition VI.B.1.i is not "ignitable" in accordance with 40 CFR §264.198.

IV.N.2. If the surrogate waste designated in permit condition VI.B.1.i. is "ignitable", in accordance with 40 CFR §264.198, the Permittee shall provide a nitrogen blanket for ACS-TANK-101 and ACS-TANK-102, at any time that the "surrogate" waste specified in permit condition IV.B.1.i. is stored in the said tanks.

IV.O. SPECIAL TANK PROVISIONS FOR INCOMPATIBLE WASTES

IV.O.1. The Permittee shall not place hazardous waste in a tank system that has not been decontaminated and that previously held a different chemical agent and/or incompatible material.

IV.O.2. The Permittee shall only place the type of agent (e.g., GB, VX, and HD) specified for the particular campaign in the tank systems during any one chemical agent campaign.

IV.O.3. Prior to initiating a campaign with a new chemical agent, the Permittee shall triple rinse the tank systems identified in Tables 4-1 and 4-2 of this permit with the appropriate decontamination solution to remove or neutralize any chemical agent residuals.

IV.O.4. The Permittee shall collect the decontamination solution generated in permit condition IV.O.3. in the Spent Decontamination Holding Tank System (SDS-TANK-101, SDS-TANK-102, and/or SDS-TANK-103). The decontamination solution shall be treated in each Liquid Incinerator's secondary combustion chambers as specified in permit condition VI.B. during Shakedown Period 2, Trial Burn Periods, and Post Trial Burn Periods and in permit condition VII.B. during normal operations.

TABLE 4-1 HAZARDOUS WASTE STORAGE TANK SYSTEMS PERMITTED FOR USE DURING SHAKEDOWN PERIODS I AND II, SURROGATE AND CHEMICAL AGENT TRIAL BURNS AND NORMAL CHEMICAL AGENT OPERATIONS

Tank I.D. Number	Maximum Allowable Capacity (gallons)	Maximum Allowable Liquid Height[1] (feet)	Dimensions of Tank (feet)	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	D001 to D011, D022, D028, D030 and D043
ACS-TANK-102	1,130	7.75	5.0 Diameter 10.0 Height	1300	Storage of drained agent	D001 to D011, D022, D028, D030 and D043
SDS-TANK-101	2,168	9.25	6.0 Diameter 10.25 Height	2379	Storage of spent decontamination and lab waste	D001 to D011, D022, D028, D030 and D043
SDS-TANK-102	2,168	9.25	6.0 Diameter 10.25 Height	2379	Storage of spent decontamination and lab waste	D001 to D011, D022, D028, D030 and D043
SDS-TANK-103	2,168	9.25	6.0 Diameter 10.25 Height	2379	Storage of spent decontamination and lab waste	D001 to D011, D022, D028, D030 and D043
BRA-TANK-101	42,629	18.25	20.0 Diameter 20.0 Height	47000	Liquids from incinerator pollution abatement systems	D001 to D011, D022, D028, D030 and D043
BRA-TANK-102	42,629	18.25	20.0 Diameter 20.0 Height	47000	Liquids from incinerator pollution abatement systems	D001 to D011, D022, D028, D030 and D043
BRA-TANK-201	42,629	18.25	20.0 Diameter 20.0 Height	47000	Liquids from incinerator pollution abatement systems	D001 to D011, D022, D028, D030 and D043
BRA-TANK-202	42,629	18.25	20.0 Diameter 20.0 Height	47000	Liquids from incinerator pollution abatement systems	D001 to D011, D022, D028, D030 and D043

[1] High-High Level Alarms

TABLE 4-2 HAZARDOUS WASTE PRIMARY CONTAINMENT SUMP[1] SYSTEMS

Sump I.D. Number[2]	Maximum Allowable Sump Capacity (gallons)	Dimensions of Sump (feet)	Maximum Allowable Liquid Height[5] (inches)	Secondary Containment Volume (gallons)	Location Reference		
					Drawing[3] Column-Row	Floor	Room[4]
MDB-SUMP-101	89	2.3x2.3x2.25	1.0	134	L-3	1	TMA
MDB-SUMP-102	89	2.3x2.3x2.25	1.0	134	L-6	1	TMA
MDB-SUMP-103	89	2.3x2.3x2.25	1.0	134	P-5	1	DECON
MDB-SUMP-104	89	2.3x2.3x2.25	1.0	134	Q-6	1	M-CR
MDB-SUMP-105	89	2.3x2.3x2.25	1.0	134	M-6	1	M-CR
MDB-SUMP-106	89	2.3x2.3x2.25	1.0	134	M-9	1	BSA
MDB-SUMP-107	89	2.3x2.3x2.25	1.0	134	M-11	1	BSA
MDB-SUMP-108	89	2.3x2.3x2.25	1.0	134	T-6	1	M-CR-AL
MDB-SUMP-109	89	2.3x2.3x2.25	1.0	134	L-5	1P	AL
MDB-SUMP-110	89	2.3x2.3x2.25	1.0	134	B-10	2	ECV

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

[2] MDB = Munition Demilitarization Building

[3] Reference building column-row numbers from Drawings UM-1-G-504, -5, -6, -7, -8, -9, -10, -11 and -UM-2-D-503.

[4] TMA = Toxic Maintenance Area, DECON = Decontamination, M-CR = Munition Corridor, BSA = 1st 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

[5] Low-level alarm height. This is the level at which the sumps pump will automatically turn on and turn off.

Sump I.D. Number[2]	Maximum Allowable Sump Capacity (gallons)	Dimensions of Sump (feet)	Maximum Allowable Liquid Height[5] (inches)	Secondary Containment Volume (gallons)	Location Reference		
					Drawing[3] Column-Row	Floor	Room[4]
MDB-SUMP-111	89	2.3x2.3x2.25	1.0	134	D-10	2	ECV
MDB-SUMP-112	89	2.3x2.3x2.25	1.0	134	J-10	2	ECV
MDB-SUMP-113	89	2.3x2.3x2.25	1.0	134	C-6	2	ECR
MDB-SUMP-114	89	2.3x2.3x2.25	1.0	134	H-6	2	ECR
MDB-SUMP-115	89	2.3x2.3x2.25	1.0	134	B.1-3	2	M-CR
MDB-SUMP-116	89	2.3x2.3x2.25	1.0	134	D-3	2	M-CR
MDB-SUMP-117	89	2.3x2.3x2.25	1.0	134	H-3	2	M-CR
MDB-SUMP-118	89	2.3x2.3x2.25	1.0	134	M-3	2	M-CR
MDB-SUMP-119	89	2.3x2.3x2.25	1.0	134	N-3	2	M-CR
MDB-SUMP-120	89	2.3x2.3x2.25	1.0	134	D-6	2	M-CR

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

[2] MDB = Munition Demilitarization Building

[3] Reference building column-row numbers from Drawings UM-1-G-504, -5, -6, -7, -8, -9, -10, -11 and UM-2-D-503.

[4] TMA = Toxic Maintenance Area, DECON = Decontamination, M-CR = Munition Corridor, BSA = 1st 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

[5] Low-level alarm height. This is the level at which the sumps pump will automatically turn on and turn off.

Sump I.D. Number[2]	Maximum Allowable Sump Capacity (gallons)	Dimensions of Sump (feet)	Maximum Allowable Liquid Height[5] (inches)	Secondary Containment Volume (gallons)	Location Reference		
MDB-SUMP-121	89	2.3x2.3x2.25	1.0	134	H-6	2	M-CR
MDB-SUMP-122	89	2.3x2.3x2.25	1.0	134	B-7	2	M-CR
MDB-SUMP-123	89	2.3x2.3x2.25	1.0	134	K-7	2	M-CR
MDB-SUMP-124	89	2.3x2.3x2.25	1.0	134	B-5	2	M-CR
MDB-SUMP-125	89	2.3x2.3x2.25	1.0	134	L-6	2	MPB
MDB-SUMP-126	89	2.3x2.3x2.25	1.0	134	N-6	2	MPB
MDB-SUMP-127	89	2.3x2.3x2.25	1.0	134	L-8	2	MPB
MDB-SUMP-128	89	2.3x2.3x2.25	1.0	134	N-8	2	MPB
MDB-SUMP-129	89	2.3x2.3x2.25	1.0	134	M-11	2	MPB
MDB-SUMP-130	89	2.3x2.3x2.25	1.0	134	L-11	2	MPB
MDB-SUMP-131	89	2.3x2.3x2.25	1.0	134	N-11	2	MPB
MDB-SUMP-132	89	2.3x2.3x2.25	1.0	134	B.1-4	2	M-CR-AL
MDB-SUMP-133	89	2.3x2.3x2.25	1.0	134	L-8	2	MPB-AL
DDYR-CHPAN-101	210	7.0x12.0x0.33	1.0	210	C-3	1	BRA
DDYR-CHPAN-102	210	7.0x12.0x0.33	1.0	210	C-3	1	BRA

TABLE 4-3 HAZARDOUS WASTE SECONDARY CONTAINMENT SUMPS SYSTEMS

Sump I.D. Number[1]	Maximum Allowable Sump Capacity (gallons)	Dimensions of Sump (feet)	Secondary Containment Volume (gallons)	Location Reference		
				Drawing[2] Column-Row	Floor	Room[3]
MDB-SUMP-134	511	4.42x4.42x3.5	none required	J-8	1	TOX
MDB-SUMP-135	85	2.25x2.25x2.25	none required	H-7	1	SDS
PUB-SUMP-101	85	2.25x2.25x2.25	none required	D.5-3	1	BRA
PUB SUMP-102	85	2.25x2.25x2.25	none required	diked area	1	BRA out-side
SITE-SUMP-101	85	2.25x2.25x2.25	within vault	diked area		BRA

[1] MDB = Munition Demilitarization Building, PUB = Process Utility Building, OUT=outside,CHB=Container Handling Building

[2] Reference building column-row numbers from Drawings UM-1-G-504, -5, -6, -7, -8, -9, -10, and -11.

[3] TOX = Toxic Cubicle, SDS = Spent Decontamination Solution, area, BRA = Brine Reduction Area,

TABLE 4-4 SUMPS SYSTEM DESIGN STANDARDS

Sump And Trench[1] Design Standards	Sump Systems		
	Primary Containment Sumps[2]	Secondary Containment Sumps[3]	Toxic Cubicle Sumps[4]
PRIMARY CONTAINMENT:			
Construction Material:	welded carbon steel	welded carbon steel	welded carbon steel
Sump Capacity, gallons	89	89	512
Specified Shell Thickness, (inches)	3/16 steel	3/16 steel	3/16 steel
Dimensions, feet:	2.3 X 2.3 X 2.25	2.3 X 2.3 X 2.25	4.42 X 4.42 X 3.5
Grating, (inches)	reinforced fiberglass	reinforced fiberglass	reinforced fiberglass
Protective Coating	Epoxy Coating	Epoxy Coating	Epoxy Coating
SECONDARY CONTAINMENT:			
Minimum Capacity, gallons	134	not applicable	512 required
Corrosion Liner Material	concrete	not applicable	concrete
Liner Thickness	6 inch		6 inch
Protective Coating	Epoxy Coating	Epoxy Coating	Epoxy Coating
LEAK DETECTION SYSTEM:			
	Visually inspect and by level detector	not applicable	Visually inspect and by level detector

[1]Standards apply to trenches (for sump collection system designed with trench).

[2]MDB-SUMP-101 through MDB-SUMP-133

[3]MDB-SUMP-135,PUB-SUMP-101,-102,SITE-SUMP-101 and CHB-SUMP-101,-102 and -103.

[4]MDB-SUMP-134 (Toxic Cubicle Sump.)

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

MODULE V - MISCELLANEOUS TREATMENT UNITS

This Module describes the Miscellaneous Treatment Units (regulated under Part 264 Subpart X) at the Umatilla Chemical Agent Disposal Facility. Six miscellaneous treatment units are located in the Brine Reduction Area (BRA) of the UMCDF site. These six treatment units are: three evaporator packages (each evaporator package consists of one flash evaporator (BRA-EVAP-101, BRA-EVAP-102, BRA-EVAP-201) and one heat exchanger (BRA-EXCH-101, BRA-EXCH-102, BRA-EXCH-201) and three drum dryers (BRA-DDRY-101, BRA-DDRY-102, BRA-DDRY-201). The Brine Reduction Area miscellaneous treatment units listed above have two major treatment objectives: (1) reducing the brines and wastewaters, from the pollution abatement system, being processed by at least 80% by weight and (2) assuring that the brine salt residues have no free liquids as determined by EPA Method 9095 (Permit Filter Liquid Test).

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

V.A.1. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

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 during Shakedown Periods II, Surrogate and Chemical Agent Trial Burn Periods and during the Post-Trial Burn Periods detailed in Module VI of this permit.

ii. 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 during normal operations detailed in Module VII of this permit.

V.A.2. MISCELLANEOUS TREATMENT UNIT DESIGN, CONSTRUCTION AND MAINTENANCE

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

i. The Permittee shall design and construct the Brine Drum Dryers (BRA-DDYR-101, BRA-DDYR-102 and BRA-DDYR-201) as specified in Table D-9-3 of Volume II, Section D-9 of the Application; all applicable drawings in Volume II, Section D-9 and Volume V, Attachment D-3 of the Application; and the applicable design specifications in Volume VI, Attachment D-3, Section D-4B-04 of the Application.

ii. The Permittee shall design and construct the Brine Exchangers (BRA-EXCH-101, BRA-EXCH-102 and BRA-EXCH-201), the Brine Evaporators (BRA-EVAP-101, BRA-EVAP-102 and BRA-EVAP-201), and subsequent ancillary equipment as specified in Tables D-9-1 and D-9-2; all applicable drawings in Volume II, Section D-9 and Volume V, Section D-3 of the Application; and the applicable design specifications in Volume VI, Attachment D-3, Section D-4B-05 of the Application.

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. Modifications to the design plans and specifications in the Application for any miscellaneous treatment unit shall be allowed only in accordance with permit condition II.A.2.

v. Prior to treatment of hazardous waste in the miscellaneous treatment units, the Permittee shall install and test all process monitoring and control instrumentation specified in Table 5-4 of this permit for the miscellaneous treatment units in accordance with the design plans in Volume II, Section D-9 and Volume VI, Attachment D-3, Sections D-4B of the Application.

vi. The Permittee shall design and construct the secondary containment sump systems identified in Table 5-2 as specified in Table 5-3 of this permit and the

applicable design specifications in Volume VI, Attachment D-3, Section D-4B of the Application.

V.A.3. MISCELLANEOUS TREATMENT UNIT INSTALLATION

i. The Permittee shall install the BRA Drum Dryers (BRA-DDRY-101, BRA-DDRY-102 and BRA-DDRY-201) in accordance with the installation specifications in Volume VI, Attachment D-3, Section D-4B-04 of the Application.

ii. The Permittee shall install the BRA Evaporators (BRA-EVAP-101, BRA-EVAP-102 and BRA-EVAP-201) and the BRA Exchangers (BRA-EXCH-101, BRA-EXCH-102 and BRA-EXCH-201) in accordance with the installation specifications in Volume VI, Attachment D-3, Section D-4B-05 of the Application.

iii. The Permittee shall not install any altered 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 §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 OAR 340-105-041 and 40 CFR §270.42.

iv. The Permittee shall obtain and submit to the Department within thirty (30) days of completing installation of each miscellaneous treatment unit a written certification from an independent, qualified installation inspector or an independent, qualified, and registered professional engineer attesting that

proper installation procedures were used for each miscellaneous treatment unit listed in Table 5-1. The independent miscellaneous treatment unit installation and primary containment system 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. Hydro-test 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. Non-compliance reports and corrective action (including field waiver reports) and repair reports.

v. The Permittee shall obtain and submit to the Department within thirty (30) days of completing installation of each miscellaneous treatment unit a written certification from an independent, qualified installation inspector or an independent, qualified, and registered professional engineer attesting that proper installation procedures were used. The independent miscellaneous treatment unit installation certification documentation submitted to the

Department for the BRA Drum Dryers (BRA-DDRY-101, BRA-DDRY-102, and BRA-DDRY-201) and the BRA Evaporator Packages (BRA-EVAP-101, BRA-EVAP-102, BRA-EVAP-201, BRA-EXCH-101, BRA-EXCH-102, and BRA-EXCH-201) 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. Non-compliance reports and corrective action;

j. Hydrotest reports;

k. ASME code data report;

l. Shop inspection reports; and

m. Shop inspector credentials.

vi. As specified in permit conditions V.A.3.i. through V.A.3.v., for each hazardous waste miscellaneous treatment unit identified in Table 5-1, the Permittee shall:

a. Maintain the installation documentation on file at the UMDA Facility until such time that the miscellaneous treatment unit is certified closed in accordance with permit condition II.J.; and

b. 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 a hazardous waste miscellaneous treatment unit, the Permittee shall comply with permit condition I.R. and permit conditions V.A.3.i. through V.A.3.vi.

V.A.4. PERFORMANCE TEST

i. The performance test plan shall be resubmitted by the Permittee as a permit modification at least 180 days prior to the proposed start date of the performance test. All applicable public comment periods and notifications as required by 40 CFR §264.601 and 40 CFR §270.62 shall be followed. [40 CFR §270.32(b)(2)]

ii. The Permittee shall conduct a performance test on the BRA in accordance with the revised performance test plan provided for in permit condition V.A.4.i. within the first 720 hours of operation of the BRA.

iii. The Permittee shall operate and monitor each miscellaneous unit during the performance test as specified in this permit and in the performance test plan.

iv. The revised performance test plan shall define operating conditions and waste feed rates that will be used to determine treatment effectiveness of the BRA. The performance test shall not begin until permit modifications have been approved by the Department.

v. The Permittee shall submit a summary of all data collected during the performance test to the Department upon completion of the performance test. The Permittee shall submit to the Department a performance test report within 90 calendar days of completion of the performance test. All submissions shall be certified in accordance with 40 CFR §264.601 and 40 CFR §270.62.

vi. If the preliminary calculations show that one or more of the performance standards listed in this permit for the BRA were not met during the performance test, the Permittee shall immediately stop waste feed to the BRA. The Department shall be verbally notified within 24 hours of this discovery. As necessary, a revised post performance test feed rate may be submitted to the Department for approval that will allow the Permittee to dispose of the remaining hazardous wastes present in the tank systems.

V.A.5. PERFORMANCE STANDARDS

i. The particulate matter emissions from the BRA, corrected to 7% oxygen in accordance with the formula given below (40 CFR §264.343 and 40 CFR §270.32(b)(2)), 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 ppm (dry volume)

Y = measured O_2 concentration in the stack gas

ii. The following metal emission rates from the BRA shall not be exceeded:

Arsenic:	*	gms/sec	Antimony:	*	gms/sec
Barium:	*	gms/sec	Lead:	*	gms/sec
Chromium:	*	gms/sec	Mercury:	*	gms/sec
Beryllium:	*	gms/sec	Silver:	*	gms/sec
Cadmium:	*	gms/sec	Thallium:	*	gms/sec
Boron:	*	gms/sec	Cobalt:	*	gms/sec
Copper:	*	gms/sec	Manganese:	*	gms/sec
Nickel:	*	gms/sec	Phosphorus:	*	gms/sec
Selenium:	*	gms/sec	Tin:	*	gms/sec
Vanadium:	*	gms/sec	Zinc:	*	gms/sec

iii. The treatment effectiveness will be at least an 80 percent volume reduction, by weight, of the feed brine that produces a brine salt which contains no free liquids. The treatment effectiveness will be determined by the following:

a. Calculating a percent volume reduction, by weight, of the batch of brine by measuring moisture content in the brine salts. The percent volume reduction will be calculated by:

[(weight of batch processed) - (weight of salts produced by drum dryers) - (weight of particulate collected in dryer knockout box) - (weight of particulate collected from baghouses) - (weight of salts collected in catch pans) - (weight of salts collected in exhaust ducts) - (weight of liquids collected in catch pan) - (weight of wash water collected from rinsing equipment) - (weight of any leaks or spills)] /(weight of batch processed).

b. Brine salt that passes the paint filter liquids test (SW-846 Method 9095).

iv. The Permittee shall continuously monitor emissions of chemical agents from the BRA. The emission level shall not exceed the following concentrations:

	Chemical Agent - Concentration (mg/m^3)		
	VX	GB	HD
Maximum Instantaneous Stack Emission	0.0003	0.0003	0.03

v. The hydrogen chloride (HCL) emissions from the BRA shall not exceed four (4) pounds per hour.

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.4.i. through V.A.4.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.4.i. through V.A.4.v., the permit may be modified, revoked, or reissued, pursuant to 40 CFR §§270.41, 270.42, and OAR 340-105-041 and OAR 340-106-005.

V.A.6. LIMITATION ON WASTE FEED

i. The Permittee shall only feed brine to the BRA Evaporator Packages and/or Drum Dryers that is agent free as analyzed according to Attachment 2 of this permit.

ii. The feed rates of brine from a surge tank to the BRA Evaporator Packages and/or Drum Dryers shall not exceed the 43,285 lbs/hr.

V.A.7. OPERATING CONDITIONS

i. The Permittee shall operate the miscellaneous treatment units as specified in Table 5-4 to maintain the system and process parameters listed in Table 5-4 of this permit within the ranges or setpoints specified in Table 5-4 of this permit.

ii. The Permittee shall operate the miscellaneous treatment units specified in Table 5-5 to automatically cut off and/or lock out the brine feed to the miscellaneous units when the monitored operating conditions deviate from the set points 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 fail.

iv. The Permittee shall operate the miscellaneous treatment units to prevent spills and overflows using the procedures and equipment described in Volume II, Section D-9 of the Application.

v. The Permittee shall operate the Brine Reduction Area Evaporator Package System (BRA-EVAP-101, BRA-EVAP-102, BRA-EVAP-201, BRA-EXCH-101, BRA-EXCH-102 and BRA-EXCH-201) as specified in Volume II, Section D-9 of the Application.

vi. The Permittee shall operate the Brine Reduction Area Drum Dryers (BRA-DDRY-101, BRA-DDRY-102 and BRA-DDRY-201) as specified in Volume II, Section D-9 of the Application.

vii. The Permittee shall prevent spills and overflows from the BRA Drum Dryers, the BRA Evaporator Packages, and the primary and secondary containment sump

systems using the procedures and equipment described in Volume II, Section D-9 of the Application.

V.A.8. OPERATING PROCEDURES FOR SECONDARY CONTAINMENT SUMPS

i. The secondary containment sumps shall consist of all sumps listed in Table 5-2 of this permit.

ii. The Permittee shall operate the secondary containment sumps in accordance with Volume II, Section D-4 of the Application.

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 non-hazardous 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. Operation of the sump level indicators, interstitial probes and the condition of the sump liner shall be visually inspected per the inspection requirements and schedules in Attachment 3 of this permit. Testing of the ability of these indicators to detect liquids and the liner to contain liquids shall be

conducted upon installation, annually, and between every chemical agent change as specified in Attachment 3 of this permit.

V.A.9. 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 incinerating 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.A.10. WASTE FEED CUT OFF REQUIREMENTS

i. The Permittee shall operate the systems, specified in Table 5-5 of this permit, to automatically cutoff and or lockout the hazardous waste feed to the BRA Evaporator Packages and 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 the approved procedures specified in Volume II, Section D-5 and Volume VII, Attachment D-3, Section D-5B of the Application. 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 cutoff or lockout 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 with the approved procedures specified in Volume II, Section D-9 of the Application, when the operating conditions deviate from the limits specified in permit condition V.A.7., unless the deviation automatically activates the waste feed cutoff and/or lockout 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.A.11. RESPONSE TO LEAKS OR SPILLS

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 Volume X, Section G of the Application for the type of waste released.

e. Close the unit in accordance with the Closure Plan in Volume IX, Section I of the Application unless the following actions are taken:

(I) 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.

(II) 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.

(III) 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.

(IV) 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 and 40 CFR §270.32(b)(2).

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; or, 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. INSPECTION SCHEDULES AND PROCEDURES

The Permittee shall inspect the hazardous waste miscellaneous treatment units, in accordance with the inspection schedules specified in Attachment 3 of this permit.

V.A.13. 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 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.

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 submitted 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 UMDA Facility, the written statements by those persons required to certify the design and installation of the hazardous waste miscellaneous treatment units as specified in permit condition V.A.3., until such time that the miscellaneous treatment unit is certified closed in accordance with permit condition II.J.6.

v. The Permittee shall keep on file at the UMDA Facility the written hazardous waste miscellaneous treatment unit assessments in accordance with 40 CFR §270.32 (b)(2)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.6.

vi. The Permittee shall maintain at the UMDA Facility a record of the results of leak tests and integrity tests conducted, in accordance with permit conditions V.A.3. or 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., 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 cutoff 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.

x. The Permittee shall record in the operating record the date, time, and duration of all automatic waste feed cutoffs 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 cutoff function failures, including the corrective measures taken to correct the condition that caused the failure.

V.A.14. CLOSURE

i. The Permittee shall close the miscellaneous treatment units listed in Table 5-1 of this permit in accordance with the Closure Plan in Volume IX, Section I of the Application.

ii. If the Permittee demonstrates that not all contaminated soils can be practically removed or decontaminated during the closure period, the Permittee shall comply with the permit conditions II.J.8. and II.J.9.

V.A.15. SPECIAL PROVISIONS FOR IGNITABLE OR REACTIVE WASTES

The Permittee shall not place ignitable or reactive waste in the miscellaneous treatment units or in the secondary containment systems listed in Tables 5-1 and 5-2 of this permit.

V.A.16. SPECIAL PROVISIONS FOR INCOMPATIBLE WASTES

i. The Permittee shall not place hazardous wastes in a miscellaneous treatment unit that has not been decontaminated and that previously held brine from a different chemical agent and/or incompatible material.

ii. During any one chemical agent campaign, the permittee shall only place in the miscellaneous treatment units the brine from on type of agent (e.g., GB, VX, and HD) specified for the particular campaign.

iii. Prior to initiating a campaign with a new chemical agent, the Permittee shall triple rinse the miscellaneous treatment units and their associated piping and ancillary equipment identified in Table 5-1 of this permit with the appropriate decontamination solution to remove brine residuals.

iv. The Permittee shall collect the decontamination solution generated in permit condition V.A.16.iii. in the BRA Surge Tank.

TABLE 5-1

Hazardous Waste Miscellaneous Treatment Units Permitted for Use During Shakedown Periods I and II, Surrogate and Chemical Agent Trial Burns, Post Trial Burn Periods and Normal Chemical Agent Operations

Unit I.D. Number	Maximum Allowable Capacity (gallons)	Dimensions of Unit (feet)	Permitted Hazardous Waste Activity	Permitted Hazardous Waste Codes[1,2]
BRA-DDRY-101	N/A	3.5' dia. X 12.0' drum length	Dehydration of brine from BRA Evaporator Packages	TC Metals (D004-D011)
BRA-DDRY-102	N/A	3.5' dia. X 12.0' drum length	Dehydration of brine from BRA Evaporator Packages	TC Metals (D004-D011)
BRA-DDRY-201	N/A	3.5' dia. X 12.0' drum length	Dehydration of brine from BRA Evaporator Packages	TC Metals (D004-D011)
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)
BRA-EVAP-102	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)

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

TABLE 5-1 (Continued)

Hazardous Waste Miscellaneous Treatment Units Permitted for Use During Shakedown Periods I and II, Surrogate and Chemical Agent Trial Burns, Post Trial Burn Periods and Normal Chemical Agent Operations

Unit I.D. Number	Maximum Allowable Capacity (gallons)	Dimensions of Unit (feet)	Permitted Hazardous Waste Activity	Permitted Hazardous Waste Codes[1,2]
BRA-EVAP-201	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)
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)
BRA-EXCH-102	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)
BRA-EXCH-201	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)

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

[1] 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.
[2] TC = Toxicity Characteristic

TABLE 5-2

HAZARDOUS WASTE SECONDARY CONTAINMENT SUMP SYSTEMS

Sump I.D Number	Maximum Allowable Capacity (gallons)	Dimensions of Sump (feet)	Location Reference		
			Drawing[1] Column - Row	Floor	Room
BRA-SUMP-101	89	4.42x4.42x3.5	C-3	1	BRA

[1] Reference building column-row numbers from Drawings UM-2-D-503 in Volume V, Section D-3 Drawings of the Application.

TABLE 5-3

SECONDARY CONTAINMENT SUMP SYSTEM

DESIGN STANDARDS

Sump Design Standards	Secondary Containment Sumps
PRIMARY LINER:	
Construction Material:	welded carbon steel
Sump Liner Capacity, (gallons)	89
Specified Shell Thickness, (inches)	3/16 steel
Grating Material	reinforced fiberglass
Dimensions, feet:	2.3 X 2.3 X 2.25
Protective Coating:	**Epoxy Coating**
LEAK DETECTION SYSTEM:	
Inspection Procedures:	Visual inspection

TABLE 5-4 BRINE REDUCTION AREA INSTRUMENT AND PROCESS DATA

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Range or Setpoint	Accuracy	Calibration Method No. and Frequency[2]
1	Brine Feed: Brine Flow Rate to Evap. Pack. BRA-EVAP-101/102/201 FI-837/FI-442/FI-835	Electro-magnetic Flowmeter	In-Line	0-50 gpm	13-23 gpm	±0.5 % of Range	Inst. Calib. Para. 2.3
2	Heat Exchangers: BRA-EVAP 101B/102B/201B Brine Temp. TR-832/TR-432/TR-890	Thermocouple	In-Line	0-500°F	210-240°F	±0.375% of Range	Inst. Calib. Para. 2.4
3	Heat Exchanger: BRA-EVAP-101B/102B/201B Brine Density DE-834/DE-434/DE-887	Magnetically Vibrated Tube	Heat Exchanger	0.5-1.5	1.08-1.25	±2% of Range	Inst. Calib. Para. 1.1 and 1.2
4	Heat Exchangers BRA-EVAP-101B/102B/201B Steam Entering: Flow Rate FIC-830/FIC-430/FIC-888	Orifice & D/P Cell	On-Line	0-20,000 lb/hr	0-9,600 lb/hr	±0.5% of Span	Inst. Calib. Para. 2.3
5	Heat Exchangers BRA-EVAP-101B/102B/201B Steam Entering: Temperature (High Alarm) TAH-919/TAH-419/TAH-724	Thermocouple	In-Line	0-500°F	260-300°F	±0.375% of Range	Inst. Calib. Para. 2.4

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Range or Setpoint	Accuracy	Calibration Method No. and Frequency[a]
6	Flash Evaporators: BRA-EVAP 101A/102A/201A Level LIT-757/LIT-454/LIT-720 High/Low Level Alarm	D/P Cell	Flash Chamber	0-72 in.	48 in.	±0.25% of Span	Inst. Calib. Para. 2.2
7	Drum Dryers: BRA-DDYR-101/102/201 Brine Flow Rate to Drum Dryer FI-851/FI-872/FI-903	Electro-magnetic Flowmeter	In-Line	0-10 gpm	5.3 gpm	±0.5% of Span	Inst. Calib. Para. 2.3
8	Drum Dryers: BRA-DDYR-101/102/201 Temp. of Brine to Drum Dryer TAH-110	Thermocouple	In-Line	0-500°F	210-240°F	±0.375% of Range	Inst. Calib. Para. 2.3
9	Drum Dryers: BRA-DDYR-101/ 102 Liquid Level in Nip LIC-758/LIC-759/LIC-760	D/P Cell	Vessel	0-36 in.	0-18 in.	±0.5% of Span	Inst. Calib. Para. 2.3
10	Drum Dryers: BRA-DDYR-101/102/201 Speed of Drum Drive Motors SIC-854/SIC-875/SIC-906	Transmitter	Drum Drive Motor	1-20 rpm	1-12 rpm	±1% of Range	Inst. Calib. Para. 2.3
11	Drum Dryers - BRA-DDYR-101/102/201 Steam Entering: Flow Rate FI-847/FI-868/FI-899	Orifice & D/P Cell	In-Line	0-10,000 lb/hr	0-3,400 lb/hr	±0.5% of Span	Inst. Calib. Para. 2.3

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Range or Setpoint	Accuracy	Calibration Method No. and Frequency[a]
12	BRA PAS: Dryer BRA-SEPA-105 Knockout Box - Temp. of Heater TIC-190	Thermocouple	Vessel	0-1,000°F	350°F	±0.375% of Span	Inst. Calib. Para. 2.4
13	BRA PAS: Burner BRA-BURN-110 - Operation (online/ offline) BE-170	Transmitter	Burner	N/A	N/A	N/A	N/A
14	BRA PAS: Burner BRA-BURN-110 - Fuel Gas Flow FO-305	Orifice Plate & D/P Cell	In-Line	0-12,000 scfh	10,000 scfh	±3% of Full Scale	Inst. Calib. Para. 2.3
15	BRA PAS: Baghouses BRA-SEPA-101/102/103/ 104 - Air Stream Temp. (Inlet) TI-172	Thermocouple	In-Line	0-1,000°F	200-400°F	±0.375% of Range	Inst. Calib. Para. 2.4
16	BRA PAS: Baghouses BRA-SEPA-101/102/103/ 104 - Pressure Differential across Bags PDI-143/PDI-144/PDI-145/ PDI-186	D/P Cell	Vessel	0-10 in. w.c.	1-7 in. w.c.	±0.25% of Range	Inst. Calib. Para. 2.3
17	BRA PAS: BRA-STAK-102 Exhaust Stack - Flow Rate FI-151	Orifice & D/P Cell	Stack	0-20,000 acfm	11,000 acfm	±0.5% of Span	Inst. Calib. Para. 2.4
18	Evaporator: Brine Temp. TISH-110	Thermocouple	Evaporator	0-500°F	212°F	±0.375% of Range	Inst. Calib. Para. 2.3

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Range or Setpoint	Accuracy	Calibration Method No. and Frequency[a]
19	Level Switch in Baghouse LAH-94/LAH-95/LAH-96/LAH96/ LAH-97	Float	Baghouse	N/A	72 in.	N/A	Inst. Calib. Para. 2.2
20	BRA Stack Exhaust gas chemical agent MON ACAM 152	Gas Chromatography	Stack	Attachment D-2	Attachment D-2	± 1% Repeatability	Attachment D-2

NOTES:

[a] See Attachment D-1 for "Process Instrument Calibration," "Oxygen and Carbon Monoxide Analyzer Calibration," and "Quality Assurance/Quality Control Data Forms." See also Operating and QA/QC procedures found in "Laboratory Quality Assurance Program for the Chemical Stockpile Disposal Program, November 1988" and Attachment D-1, "Stack Gas Sample Conditioning System." Additional operating and QA/QC procedures for the Automatic Continuous Air Monitoring System (Item No. 33 above) are in Attachment D-2 and Attachment F-1.

[b] D/P = differential pressure N/A = not applicable

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

Item Number	Tag Number	Process Data Description	Set
BRA 1		Agent Concentration in brine going into the evaporator	Agent free a according to of this perm
BRA 2		Brine pH going into evaporator high	10.0
BRA 3		Brine pH going into evaporator low	5.5
BRA 4		Brine specific gravity going into evaporator high	1.25
BRA 5		Brine specific gravity going into evaporator low	1.00
BRA 6		Toxicity Organics concentration in brine going into the evaporator	Less than TC detectable
BRA 7		Brine specific gravity going into drum dryer high	1.25

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

Item Number	Tag Number	Process Data Description	Set
BRA 8		Brine specific gravity going into drum dryer low	1.08
BRA 9	TAH-110	Brine temperature into the drum dryer high	250 °F
BRA 10	FIT-42 FIT-43 FIT-44	Total brine feed rate to the three drum dryers high	33423 lbs/hr adjusted per necessary to final metals limitations

Item Number	Tag Number	Process Data Description	Set
BRA 11	TAH-172	Temperature of flue gas into baghouse high	400 °F
BRA 12	PDAHH-143 PDAHH-144 PDAHH-145 PDAHH-186	Differential pressure of the baghouse high-high	7 in. w.c.
BRA 13	PDT-143 PDT-144 PDT-145 PDT-186	Differential pressure of the baghouse low	1 in. w.c.
BRA 14	BSLL-170	Loss of burner flame low-low	Flame loss
BRA-15	ACAM-152	Chemical Agent emission high-jigh based on instantaneous measurement in BRA stack	0.0003 mg/m^3 0.03 mg/m^3 0.0003 mg/m^3

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 Applicable to All UMCDF Incinerators
Section VI.B. - Liquid Incinerators (LICs)
Section VI.C. - Metal Parts Furnace (MPF)
Section VI.D. - Deactivation Furnace System (DFS)
Section VI.E. - Dunnage Incinerator (DUN)
Section VI.F. - Combined Stack for the LICs, MPF and DFS

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

V1.A.1. CONSTRUCTION AND MAINTENANCE [40 CFR §264.31]

i. The Permittee shall construct each incinerator in accordance with the design plans and specifications contained in Volume II, Sections D-5 through D-8 and Volume VII, Attachment D-3, Sections D-5b through D-8b of the Application.

ii. All process monitors required, pursuant to permit conditions VI.B.4., VI.C.4, VI.D.4. and VI.E.4., 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, 7-1, 7-3, 7-5 and 7-7 of this permit.

iii. Modifications to the design plans and specifications in the Application for any incinerator shall be allowed only in accordance with permit condition II.A.2.

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 7-1, 7-3, 7-5 and 7-7 of this permit for the incinerators in accordance with the design plans in Volume II, Sections D-5 through D-8 and Volume VII, Attachment D-3, Sections D-5b through D-8b of the Application.

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 each incinerator during shakedown, trial-burn and post trial-burn periods such that when operated, in accordance with the operating requirements specified in this permit, it will meet the applicable performance standards specified in permit conditions VI.B.1., VI.C.1., VI.D.1., and VI.E.1.

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. The Pollution Abatement System Carbon Filter system, which is not required to be utilized for demonstrating performance during trial burn periods under this permit, are required to meet this requirement.

VI.A.2. INSPECTION REQUIREMENTS [40 CFR §264.347]

i. The Permittee shall inspect each incinerator in accordance with the inspection schedules and requirements in Attachment 3 of this permit.

ii. The inspection data for each incinerator shall be recorded, and the records shall be placed in the operating record for the respective incinerator, in accordance with permit condition II.I.

VI.A.3. MONITORING REQUIREMENTS [40 CFR §264.37]

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 establish an emission monitoring system for total organic carbon (TOC). Such a system shall be implemented as a permit modification request in accordance with 40 CFR §270.42. The Permittee shall submit this permit modification request no later than 360 days after the effective date of this permit condition. [40 CFR 270.32(b)(2)]

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 cutoffs 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 cutoff 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 cutoff.

VI.A.5. TRIAL BURN PLAN AND DATA SUBMISSION

i. The Permittee shall operate and monitor each incinerator during the short-term periods (shakedown, trial-burn, and post trial-burn) as specified in Module VI of this permit and in the trial burn plans for surrogate and each different chemical agent. [40 CFR §270.62]

ii. The individual trial burn plan for surrogate and each different chemical agent for each incinerator shall be resubmitted by the Permittee as a

permit modification at least 180 days prior to the start date of the shakedown period for each trial burn. All applicable public comment periods and notifications as required by 40 CFR §270.42 shall be followed.

iii. The revised trial burn plans for the surrogate and each different chemical agent trial burn 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. The revised trial burn plans shall also include ramp up procedures during the shakedown periods. The revised trial burn plans shall also address stack sampling for total organics in accordance with EPA Document "Guidance For Total Organics Final Report," March 1996 (See permit condition VI.A.3.iii.) Shakedown Periods I and II shall not begin until permit modifications in accordance with VI.A.5.ii have been approved by the Department.

iv. The Permittee may not start Shakedown Period II in any incinerator system until the Department has approved in writing both the surrogate trial burn test data and the specific chemical agent trial burn plan for that incinerator system.

v. The Permittee shall submit a summary of all data collected during the trial burn to the Department upon completion of each trial burn period. The Permittee shall submit to the Department a trial burn test report within 90 calendar days of completion of each trial burn. All submissions shall be certified in accordance with 40 CFR §§270.62(b)(7),(8)and(9).

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, 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 feed rate may be submitted to the Department for approval in writing, that will allow the Permittee to dispose of the remaining hazardous wastes present in the tank systems.

vii. If the preliminary calculations for any trial burn, 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 6-16 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 off-set 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 will resume upon written approval from the Department. [40 CFR 270.32(b)(2)]

VI.A.6. SHAKEDOWN

i. Shakedown Periods I and II for each incinerator shall be conducted in accordance with the approved trial burn plans provided for in permit condition VI.A.5.

ii. Shakedown Period I for each incinerator shall begin with the initial introduction of surrogate into the furnace system following construction and shall end with the start of the surrogate trial burn.

iii. Shakedown Period II for each incinerator shall begin with the introduction of chemical agent into the incinerator system and shall end with the start of the chemical agent trial burn. There shall be a

separate Shakedown Period II for each chemical agent for each incinerator.

iv. 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.A.7. SHUTDOWN

After the completion of the surrogate post trial burn period, the Permittee shall complete the shutdown procedure in the approved trial burn plan prior to resumption of the non-hazardous waste simulant testing in each incinerator system. After the shutdown is complete, daily inspections of the respective incinerator and tank systems used in the surrogate trial burn will not be required until hazardous wastes are re-introduced into the equipment.

VI.A.8. REPORTING

i. During the shakedown, trial burn and post-trial burn periods, the Permittee shall calibrate the oxygen (O_2) and carbon monoxide (CO) continuous emission monitors (CEMS) specified in this permit in accordance with the Performance Specifications for Continuous Emission Monitoring Systems referenced by Part 266 APPENDIX IX.

ii. During the shakedown, trial burn and post-trial burn periods, the Permittee shall submit a report of all quarterly CEM Calibration Error and annual CEM Performance Specification Tests conducted in accordance with Condition VI.A.8.i. of this permit within 30 calendar days of the date of the tests.

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 a destruction and removal efficiency (DRE) of 99.9999% for the surrogate principal organic hazardous constituents (POHCs) and chemical agent listed below.

Surrogate POHCs	Chemical Agent
Perchloroethylene	GB, VX, and HD (Mustard), individually
Trichloroethane	
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, the particulate matter emission from the common stack, corrected to 7% oxygen in accordance with the formula given below (40 CFR §264.343 and 40 CFR §270.32(b)(2)), 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 combined LIC shall not exceed 3.81×10^{-2} grams per second. [40 CFR 264.343(b)]

iv. During the shakedown, trial burn, and post-trial burn periods, if the emission rates listed in Table 6-2 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 of each metal into each LIC as specified in Table 6-1. [40 CFR §270.32(b)(2)]

v. If the Permittee submits a notification pursuant to permit condition VI.B.1.iv., the Director may submit in writing direction to the Permittee to stop waste feed to the LICs in accordance with permit condition VI.A.5.vii. Resumption of waste feed operations to the LICs shall be in accordance with permit condition VI.A.5.vii.

vi. During the shakedown, trial burn and post-trial burn periods, the Permittee shall control emissions of products of incomplete combustion (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)]

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

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 shakedown, trial burn and post-trial burn periods, the Permittee shall continuously monitor emissions of chemical agents from each LIC. The emission level shall not exceed the following concentrations:

	Chemical Agent - Concentration (mg/m^3)		
	VX	GB	HD
Maximum Instantaneous			

Stack Emission	0.0003	0.0003	0.03

Non-compliance 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, 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, 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 feed rates indicated in Table 6-1 of this permit and shall not deviate from the operating conditions specified in Tables 6-3 and 7-1 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 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, the Permittee shall be authorized to commence hazardous waste feed to each LIC up to 100% feed rates demonstrated during the previous trial burn for each LIC upon submittal and Departmental approval of the following:

1. A complete trial burn report.

2. A submittal proposing operating conditions for post trial burn and normal operating periods.

3. A health risk assessment report completed pursuant to permit condition II.N.

v. The Permittee shall not feed the following wastes to each LIC, during the shakedown period.

1. Acutely toxic hazardous wastes listed in 40 CFR §261.33(e).

2. RCRA Hazardous Wastes FO20 through FO23, FO26, and FO27.

3. Any waste containing chemical agents.

4. Any wastes containing polychlorinated biphenyl (PCBs).

vi. Decontamination solution and aqueous laboratory liquids may be fed to the secondary chamber of each LIC during Shakedown Period II only when the operating conditions as specified in section VI.B.3. of this permit are satisfied.

vii. During the trial burn and post-trial burn the spent decontamination solution and the Monitoring Support Building and Laboratory aqueous liquid wastes shall be fed only into the secondary combustion chamber of each LIC with, or without, the chemical agent feed to the primary combustion chamber.

viii. During the shakedown, trial burn and post-trial burn periods, the feed rates to each LIC shall not exceed the limits in Table 6-1 of this permit and in accordance with permit condition VI.B.2.

ix. During the chemical agent post-trial burn periods at each incinerator, the Permittee shall incinerate only the chemical agent that has been test burned during the preceding chemical agent trial burn, 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, 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, or waste containing one chemical agent, shall be fed to any LIC incinerator, at any given time.

VI.B.3. OPERATING CONDITIONS

i. During the shakedown, trial burn and post-trial burn periods, the Permittee shall operate each LIC in order to maintain the system and process parameters listed in Table 7-1 of this permit within the ranges or setpoints specified in Table 7-1 of this permit.

ii. During the shakedown, trial burn and post-trial burn periods, the Permittee shall operate the 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. 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 days.

VI.B.4. MONITORING REQUIREMENTS

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 6-3 and 7-1 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 each LIC if any of the monitoring instruments listed in Table 7-1 of this permit, fails to operate properly.

VI.B.5. WASTE FEED CUT-OFF REQUIREMENTS

i. During the shakedown, trial burn and post-trial burn 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, the Permittee shall manually cut off and/or lock out the waste feed, and perform staged shut down of each LIC, in accordance with the approved procedures specified in Volume II, Section D-5 and Volume VII, Attachment D-3, Section D-5b of the Application, when the operating conditions deviate from the limits specified in permit condition VII.B.4. unless the deviation automatically activates the waste feed cutoff 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 and post-trial burn, the Permittee shall immediately, manually, cut off and/or lockout the waste feed, and perform staged shut down of each LIC in accordance with the approved procedures specified in Volume II, Section D-5 and Volume VII, Attachment D-3, Section D-5b of the Application. The Permittee shall not restart the 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 cutoff or lockout is/are restored to permit limits and all other parameters are within permit limits.

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 a destruction and removal efficiency (DRE) of 99.99% for the chemical agent and a DRE of 99.9999% for the surrogate POHCs .

Surrogate POHCs	Chemical Agent
Perchloroethylene	GB, VX, and HD (Mustard), individually
Trichloroethane	

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, the particulate matter emission from the common stack, corrected to 7% oxygen in accordance with the formula given below (40 CFR §264.343 and 40 CFR §270.32(b)(2)), 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 8.16×10^{-3} grams per second. [40 CFR 264.343(b)]

iv. During the shakedown, trial burn, and post-trial burn periods, if the emission rates listed in Table 6-2 are exceeded, the Permittee shall notify the Department in accordance with permit condition VI.A.5.vii.

The above emission limits shall be met by limiting feed rate of each metal into each MPF as specified in Table 6-1. [40 CFR §270.32(b)(2)]

v. If the Permittee submits a notification pursuant to permit condition VI.C.1.iv., the Director may submit in writing direction to the Permittee to stop waste feed to the MPF in accordance with permit condition VI.A.5.vii. Resumption of waste feed operations to the MPF shall be in accordance with permit condition VI.A.5.vii.

vi. During the shakedown, trial burn and post-trial burn periods, the Permittee shall control emission of products of incomplete combustion (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)]

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

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 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:

	Chemical Agent - Concentration (mg/m^3)		
	VX	GB	HD
Maximum Instantaneous Stack Emission	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 ON 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 Tables 6-4 of this permit and shall not deviate from the operating conditions specified in Tables 6-7 and 7-3 of this permit.

iii. After successful completion of the chemical agent trial burn, the Permittee shall be authorized to commence hazardous waste feed to MPF up to 75% of the maximum feed rates indicated in Tables 6-4 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 condition VI.C.1.

iv. After successful completion of the chemical agent trial burn, the Permittee shall be authorized to commence hazardous waste feed to the MPF up to 100% feed rates demonstrated during the previous trial burn for each LIC upon submittal and Departmental approval of the following:

1. A complete trial burn report.

2. A submittal proposing operating conditions for post trial burn and normal operating periods.

3. 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, the feed rates to the MPF shall not exceed the limits in Table 6-6 of this permit and in accordance with permit condition VI.C.2.

vii. The Permittee shall not feed the following wastes to the MPF, during the shakedown Period.

1. Acutely toxic hazardous wastes listed in 40 CFR §261.33(e).

2. RCRA Hazardous Wastes FO20 through FO23, FO26, and FO27.

3. Any waste containing chemical agent

4. 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, in accordance with the waste analysis plan requirements in Attachment 2 of this permit.

ix. Only one chemical agent, or waste containing one chemical agent, shall be fed to the metal parts furnace, at any given time.

VI.C.3. <u>OPERATING CONDITIONS</u>

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 ranges or setpoints specified in Table 7-3 of this permit.

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. 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.

iv. The hourly feed rate of the residual chemical agent contained in the MPF feed, which was calculated, assuming a 5% heel, from the amount of chemical agent in the munitions, shall not exceed the limits provided in Table 6-4 of this permit, unless the following conditions are met:

a. The Permittee has provided the Department verbal notice of the following:

(I) The detection of a munition that can not be drained to a 5% or less residual chemical agent heel indicating, its type and its location (i.e., process line leading to furnace, temporary holding location).

(II) The percent chemical agent heel remaining in the munition.

(III) Efforts expended to facilitate additional draining of the munition.

b. The Permittee has provided the Department written procedures for processing of the munition that can not be drained to a 5% or less residual chemical agent heel to reduce its vaporization rate in the MPF to the rate which would be produced by the feedrate allowed in Table 6-4 of this permit. These procedures must be consistent with the procedures specified in Attachment 4 of this permit with the following exceptions:

(I) The temperature and residence time in zones 1, 2, and 3 will be specified based on the development of a vaporization curve and calculations for the munition type and the quantity and type of residual chemical agent remaining, which does not exceed the vaporization rate which would be produced by the feedrate allowed in Table 6-4 of this permit. The supporting vaporization curve and calculations shall be provided with the procedures to the Department.

II) The temperature maintained in the afterburner shall be in accordance with permit conditions VI.C.3.i and ii.

c. The Permittee receives approved procedures from the Department for processing the munition that cannot be drained to a 5% or less residual chemical agent heel.

v. 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.

VI.C.4. MONITORING REQUIREMENTS

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.

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 steeping 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 staged shut down of the MPF, in accordance with the approved procedures specified in Volume II, Section D-6 and Volume VII, Attachment D-3, Section D-6b of the Application, when the operating conditions deviate from the limits specified in Table 6-7 of this permit, unless the deviation automatically activates the waste feed cutoff and/or lockout 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 staged shut down of the MPF in accordance with the approved procedures specified in Volume II, Section

D-6 and Volume VII, Attachment D-3, Section D-6b of the Application. The Permittee shall not restart the 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 cutoff or lockout is/are restored to permit limits and all other parameters are within permit limits.

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 a destruction and removal efficiency (DRE) of 99.99% for the chemical agent and a DRE of 99.9999% for the surrogate POHCs.

Surrogate POHCs	Chemical Agent
Perchloroethylene	GB and VX, individually
Trichloroethane	
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, the particulate matter emissions from the common stack, corrected to 7% oxygen in accordance with the formula given below (40 CFR §264.343 and 40 CFR §270.32(b)(2)), 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 combined DFS shall not exceed 1.16×10^{-3} grams per second. [40 CFR 264.343(b)]

iv. During the shakedown, trial burn, and post-trial burn periods, if the emission rates listed in Table 6-2 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 of each DFS as specified in Table 6-1. [40 CFR §270.32(b)(2)]

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.

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.

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

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 shakedown, trial burn and post-trial burn periods, the Permittee shall continuously monitor and control emission of chemical agents from the DFS. The emission level shall not exceed the following concentrations:

	Chemical Agent - Concentration (mg/m^3)		
	VX	GB	HD
Maximum Instantaneous Stack Emission	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)]

VI.D.2. LIMITATION 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 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:

1. A complete trial burn report.

2. A submittal proposing operating conditions for post trial burn and normal operating periods.

3. 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 6-9 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 6-10 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.

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 ranges or setpoints specified in Table 7-5 of this permit.

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. 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.

iv. 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.

v. 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; or at all times when a rocket piece

is at the blast gate and the gate is jammed. The flowrate of the decontamination solution or process water to the rocket shear blade will be continuously monitored and recorded during rocket processing operations. [40 CFR §270.32(b)(2)]

vi. A time delay of 30 seconds shall be provided for feeding other munition sections before and after feeding fuses to the DFS with the exception that nose plugs can be fed with the fuses. [40 CFR §270.32(b)(2)]

VI.D.4. MONITORING REQUIREMENTS

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.

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 the Table 6-11 of this permit.

ii. The Permittee shall manually cut off and/or lockout the waste feed and perform staged shut down of the DFS, in accordance with the approved procedures specified in Volume II, Section D-7 and Volume VII, Attachment D-3, Section D-7B of the Application, when the operating conditions deviate from the limits specified in permit condition

VI.D.3., unless the deviation automatically activates the waste feed cutoff and/or lockout sequence specified in permit condition VI.D.5.i.

iii. In case of a malfunction of the automatic waste feed cutoff 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 staged shut down of the DFS in accordance with the approved procedures specified in Volume II, Section D-7 and Volume VII, Attachment D-3, Section D-7b of the Application. The Permittee shall not restart the 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 cutoff or lockout is/are restored to permit limits and all other parameters are within permit limits.

VI.E. DUNNAGE INCINERATOR (DUN)

VI.E.1. PERFORMANCE STANDARDS

i. During the shakedown, trial burn and post-trial burn periods, the DUN must achieve a destruction and removal efficiency (DRE) of 99.99% for the chemical agent and a DRE of 99.9999% for the surrogate POHCs.

Surrogate POHCs	Chemical Agent
Perchloroethylene	GB, VX, and HD (Mustard), individually
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, the particulate matter emission from the DUN stack, corrected to 7% oxygen

in accordance with the formula give below [40 CFR §264.343 and 40 CFR §270.32(b)(2)], 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 ppm (dry volume)

Y = measured O_2 in the stack gas

iii. The hydrogen chloride (HCl) emission from the combined DUN shall not exceed 5.04×10^{-1} grams per second. [40 CFR 264.343(b)]

iv. During the shakedown, trial burn, and post-trial burn periods, if the emission rates listed in Table 6-2 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 of each metal into each DUN as specified in Table 6-1. [40 CFR §270.32(b)(2)]

v. If the Permittee submits a notification pursuant to permit condition VI.E.1.iv., the Director may submit in writing direction to the Permittee to stop waste feed to the DUNs in accordance with permit condition VI.A.5.vii. Resumption of waste feed operations to the DUNs shall be in accordance with permit condition VI.A.5.vii.

vi. During the shakedown, trial burn and post-trial burn periods, the Permittee must control emission of PICs from the DUN stack such that the CO level in the DUN 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.

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

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 shakedown, trial burn, and post-trial burn periods, the Permittee shall continuously monitor emissions of chemical agents from the DUN. The emission levels shall not exceed the following concentrations:

	Chemical Agent - Concentration (mg/m^3)		
	VX	GB	HD
Maximum Instantaneous Stack Emission	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.E.3, shall be regarded as compliance with the required performance standards identified in permit conditions VI.E.1.i through VI.E.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.E.3 is not sufficient to ensure compliance with the performance standards specified in permit conditions VI.E.1.i through VI.E.1.vii, the permit may be modified, revoked, or reissued, pursuant to 40 CFR §270.41. [40 CFR §270.32(b)(2)]

VI.E.2. LIMITATION ON WASTE FEED[40 CFR 270.62(c)]

i. During the shakedown and post-trial burn periods, the Permittee shall incinerate only the hazardous wastes in Table 6-12 of this permit in the DUN, in compliance with the operating requirements specified in permit condition VI.E.3.

ii. After successful completion of the chemical agent trial burn the Permittee shall be authorized to commence hazardous waste feed to the DUN up to 50% of the maximum feed rates indicated in Table 6-12 of this permit and shall not deviate from the operating conditions specified in Tables 6-15 and 7-7 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 DUN up to 75% of the maximum feed rates indicated in Table 6-12 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.E.1.

iv. After successful completion of the chemical agent trial burn, the Permittee shall be authorized to commence hazardous waste feed to the DUN up to 100% feed rates demonstrated during the previous trial burn for the DUN upon submittal and Departmental approval of the following:

1. A complete trial burn report.

2. A submittal proposing operating conditions for post trial burn and normal operating periods.

3. A health risk assessment report completed pursuant to permit condition II.N.

v. During the trial burn period, the Permittee shall incinerate only the hazardous wastes in Table 6-13 of this permit in the DUN, in compliance with the operating requirements specified in permit condition VI.E.3.

vi. The feed rates to the DUN shall not exceed the limits in Table 6-14 of this permit. in accordance with permit condition VI.E.2.

vii. Notwithstanding the waste feed limits specified in permit condition VI.E.2.i. the Permittee shall not feed more than 92 pounds of dunnage into the DUN in any given fifteen-minute period. The frequency of the ram feed shall not be less than every 15 minutes.

viii. Throughout operation, the Permittee shall conduct sufficient analysis of the waste treated in the DUN 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.

ix. Only one chemical agent, or waste containing one chemical agent, shall be fed to the Dunnage incinerator, at any given time.

VI.E.3. OPERATING CONDITIONS

i. During the shakedown, trial burn and post-trial burn periods, the Permittee shall operate the DUN in order to maintain the system and process parameters listed in Table 7-7 of this permit within the ranges or setpoints specified in Table 7-7 of this permit.

ii. During the shakedown, trial burn and post-trial burn periods, the Permittee shall operate the AWFCO systems, specified in Table 6-15 of this permit, to automatically cut off and or lock out the hazardous waste feed to the DUN when the monitored operating conditions deviate from the setpoints specified in Table 6-15 of this permit.

iii. Any metal waste fed into the DUN shall remain in the primary chamber, exposed to at least 1000°F, for a minimum period of 15 minutes, before discharged from the primary chamber.

iv. The Permittee shall not commence any trial burn period until documentation has been submitted to the Department verifying that the DUN has operated at the planned trial burn operating setpoints in Table 6-15 of this permit and at a minimum of 90% of the feed rates in Table 6-12 of this permit for a minimum of an eight consecutive hour period on two consecutive days.

v. During the shakedown, trial burn and post-trial burn periods, the DUN primary chamber shall be operated to minimize residue build-up, including opening the horizontal sliding gate, removing the vertical drop chutes, and waste bin change-outs.

VI.E.4. MONITORING REQUIREMENTS

i. The Permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment as specified in Tables 6-15 and 7-7 of this permit, while incinerating hazardous waste.

ii. Hazardous wastes shall not be fed to the DUN if any of the monitoring instruments listed in Tables 6-15 and 7-7 of this permit fails to operate properly.

VI.E.5. WASTE FEED CUT-OFF REQUIREMENTS

i. The Permittee shall construct and maintain the systems specified in Table 6-15 of this permit, to automatically cut off and/or lock out the hazardous waste feed to the DUN when the monitored operating conditions deviate from the setpoint specified in the Table 6-15 of this permit.

ii. During the shakedown, trial burn and post-trial burn periods, the Permittee shall manually cut off the waste feed and perform staged shutdown of the DUN, in accordance with the approved procedures specified in Volume II, Section D-8 and Volume VII, Attachment D-3, Section D-8b of the Application, when the operating conditions deviate from the limits specified in Condition VI.E.3. of this permit, unless the deviation automatically activates the waste feed cut-off sequence specified in permit condition VII.E.6.i.

iii. In case of a malfunction of the automatic waste feed cutoff systems listed in Table 6-15 of this permit. During the shakedown, trial burn and post-trial burn periods, the Permittee shall immediately, manually, cut off and/or lock out the waste feed and perform staged shut down of the DUN in accordance with the approved procedures specified in Volume II, Section D-8 and Volume VII, Attachment D-3, Section D-8b of the Application. The Permittee shall not restart the 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 cutoff or lock out is/are restored to permit limits and all other parameters are within permit limits.

VI.F. COMMON STACK FOR LIC, MPF, & DFS

VI.F.1. During the shakedown, trial burn and post-trial burn periods, the Permittee shall install and maintain the continuous exhaust gas monitoring systems for carbon monoxide, oxygen, and chemical agent emission, from the common stack.

VI.F.2. During the shakedown, trial burn and post-trial burn periods, the exhaust gas monitoring systems specified in Condition VI.F.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.F.3. During the shakedown, trial burn and post-trial burn periods, the chemical agent emission from the common stack, monitored as specified in permit condition VI.F.2. of this permit, shall not exceed the following concentrations:

	Chemical Agent - Concentration (mg/m^3)		
	VX	GB	HD
Maximum Instantaneous Stack Emission	0.0003	0.0003	0.03

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

VI.F.5 The Permittee shall submit an engineering design to incorporate "staggered" ACAMS monitoring at the stack to allow for more frequent sampling and therefore allow for quicker response to releases.

i. The Permittee shall submit an engineering design and a work plan implementation schedule 360 days from the effective date of this permit condition or a permit modification in accordance with 40 CFR 270.42.

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

DESCRIPTION OF HAZARDOUS WASTES	Feed-Rate
Surrogate	1032 lbs/hr.
	18 lbs/min.
Chemical Agents:	
VX	680 lbs/hr.
	12 lbs/min.
GB	1030 lbs/hr.
	18 lbs/min.
HD	1305 lbs/hr.
	23 lbs/min.
Decontamination Solution and Monitoring Support Building and Laboratory, Aqueous Liquid Wastes:	2000 lbs/hr.

TABLE 6-2 ALLOWABLE EMISSION RATES FROM THE COMBINED LIQUID INCINERATORS

Allowable Emission Rates (grams/second)		
Constituent	CAS No.	LIC
ORGANICS		
TEQ 2,3,7,8-PCDF's [Dioxin & Furan congeners]		1.95E-09
Total Polychlorinated Biphenyls [PCB cong]	1336-36-3	
1,1,2,2-Tetrachloroethane	79-34-5	6.39E-06
1,1-Dichloroethane	75-34-3	3.42E-06
2,4,6-Trinitrotoluene	118-96-7	
2,4-Dinitrotoluene	121-14-2	
2,6-Dinitrotoluene	606-20-2	
2-Hexanone	591-78-6	1.72E-05
Acetone	67-64-1	3.31E-01
Benzene	71-43-2	5.77E-04
Benzoic Acid	65-85-0	1.08E-03
Benzyl Alcohol	100-51-6	1.12E-02
Bis(2-ethylhexyl)phthalate	117-81-7	2.59E-03
Bromodichloromethane		3.42E-06
Bromoform	75-22-2	3.18E-05
Carbon disulfide		6.50E-05
Carbon Tetrachloride	56-23-5	2.20E-04
Chlorobenzene	106-90-7	1.67E-05
Chloroform	67-66-3	1.39E-04
Chloromethane	74-87-3	4.99E-03
m-Cresol	108-39-4	1.27E-03
o-Cresol	95-48-7	1.17E-03
p-Cresol	106-44-5	3.94E-04
Di(n)octyl phthlate	117-84-0	1.23E-04
Di-n-butyl Phthalate	84-74-2	6.24E-05
Dibromochloromethane	124-48-1	3.42E-06
(cis)1,3-Dichloropropene	542-75-6	1.62E-03
(trans)1,3-Dichloropropene	542-75-6	3.42E-06
Diethyl Phthalate	84-66-2	2.49E-04
Dimethyl Phthalate	131-11-3	1.77E-03
Ethylbenzene	100-41-4	9.92E-06
HMX	2691-41-0	
Methyl chloroform	71-55-6	1.66E-04
Methyl ethyl ketone	78-93-3	1.18E-03

Allowable Emission Rates (grams/second)		
Constituent	CAS No.	LIC
Methyl isobutyl ketone		2.21E-05
Methylene chloride	75-09-2	3.76E-02
Naphthalene	91-20-3	6.24E-05
Nitroglycerine	55-63-0	
Propylene dichloride	78-87-5	1.88E-03
RDX	121-82-4	
Styrene	100-42-5	5.64E-04
Tetrachloroethylene	127-18-4	1.15E-05
Toluene	106-88-3	2.11E-02
Vinyl acetate	108-05-4	4.88E-06
Vinyl chloride	75-01-4	2.95E-05
Total xylene	1330-20-7	4.49E-05
METALS		
Antimony	7440-36-0	1.29E-04
Arsenic	7440-38-2	2.20E-04
Barium	7440-39-3	1.77E-04
Beryllium	7440-41-7	5.82E-05
Boron	7440-42-8	6.34E-03
Cadmium	7440-43-9	5.82E-05
Chromium	7440-47-3	5.82E-05
Cobalt	7440-48-4	7.28E-05
Copper	7440-50-8	7.28E-05
Lead	7439-2-1	3.03E-04
Manganese	7439-96-5	9.45E-03
Mercury	7440-97-6	6.19E-05
Nickel	7440-02-0	3.81E-04
Phosphorous	7440-14-0	4.10E-03
Selenium	7782-49-2	8.85E-05
Silver	7440-22-4	1.29E-04
Tin	7440-31-5	4.57E-04
Thallium	7440-28-0	5.82E-04
Vanadium	7440-62-2	8.85E-05
Zinc	7440-66-6	1.90E-03
ACID GASSES		
Hydrogen Chloride		3.81E-02
Hydrogen Fluoride		1.05E-01
OTHER CONSTITUENTS		
Chlorine		4.57E-02
Particulates		1.08E-01

TABLE 6-3 LIQUID INCINERATOR WASTE-FEED CUTOFF PARAMETERS

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
LIC-01	PAHH-243/845	Primary chamber pressure high-high	-0.1 inch w.c.	-0.1 in. w.c.
LIC-02	TAH-43/752	Primary chamber exhaust temperature high	2,850 F	3,000 F
LIC-03	TALL-43/752	Primary chamber exhaust temperature low-low	2,900 F	2,500 F
LIC-04	PAL-51/765	Process water/spent decontamination solution feed pressure low	65 psig	65 psig
LIC-05	PALL-760/112	Agent feed pressure low	5 psig	5 psig
LIC-06	TALL-192/782	Secondary chamber exhaust temperature low-low	1,850 F	1,800 F
LIC-07	TAHH-613/713	Secondary chamber temperature high-high	2,150 F	2,200 F
LIC-08	PALL-200/795	Combustion air to secondary chamber burner pressure low-low	36 inches w.c.	36 in. w.c.
LIC-09	PDAH-854/855	Flue gas flow rate in the secondary chamber exhaust high	0.5 inch w.c.	0.5 in w.c.

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
LIC-10	FDAH-127/731	Surrogate and chemical agent feed rate high-high based on hourly rolling average (not to exceed 2% of hourly feed rate per min to maintain steady state)	Surrogate 1,032 lb/hr 18 lb/min VX 680 lb/hr 12 lb/min GB 1,030 lb/hr 18 lb/hr HD 1,305 lb/hr 23 lb/hr	Surrogate 1,032 lb/hr 18 lb/min VX 680 lb/hr 12 lb/min GB 1,030 lb/hr 18 lb/hr HD 1,305 lb/hr 23 lb/hr

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
LIC-11	FAHH-102/763	Process water/spent decontamination solution feed rate high-high	2,000 lb/hr, maximum; to be adjusted periodically or as necessary to comply with final metals and chlorine limitations	2,000 lb/hr, maximum; to be adjusted periodically or as necessary to comply with final metals and chlorine limitations

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
LIC-12	AAHH-83/778	Secondary chamber exhaust CO concentration high-high	100 ppm corrected to 7% O_2, dry basis based on 1 hr. rolling average	100 ppm corrected to 7% O_2, dry basis based on 1 hr. rolling average

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
LIC-13	PALL-127A /127B/737A/ 737B	Primary atomizing air pressure low-low	12 psig	12 psig
LIC-14	PAL-58/809	Secondary atomizing air pressure low-low	47 psig	47 psig
LIC-15	PDIT-90/814	Venturi scrubber pressure drop low-low	20 inches w.c.	20 in. w.c.
LIC-16	FAL-112/825	Clean liquor flow rate to scrubber tower low-low	766 gpm	690 gpm
LIC-17	AIT-134/163	Chemical agent emission high-high based on instantaneous measurement	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX
LIC-19	LSHH-02/06 /702/706	Brine surge tanks 101,102,201,202. Both levels high-high	18 feet 3-inch level	18 feet 3-inch level
LIC-20	AAL-116/832	Clean liquor to scrubber tower pH low	8	7.5
LIC-21	PAL-129/839	Clean liquor to scrubber tower pressure low	15 psig	15 psig

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
LIC-22	TSHHH-396/817	Scrubber inlet temperature (quench tower exhaust gas temperature) high-high-high	250 F	250 F
LIC-23	FAL-88/828	Quench brine to venturi scrubber flowrate low	109 gpm	100 gpm
LIC-24	DAH-117/826	Brine density high	80 lb/ft^3	90 lb/ft^3
LIC-25	LSHH-99/820	Scrubber tower sump liquid level high-high	84 inches above bottom tangent line	84 inches above bottom tangent line
LIC-26	AIT-229/798	Oxygen concentration in secondary chamber exhaust gas high	12% corrected to a dry basis	12% corrected to a dry basis
LIC-27	AIT-229/798	Oxygen concentration in secondary chamber exhaust gas low	7% corrected to a dry basis	7% corrected to a dry basis
LIC-28	PSHH-888/896	Secondary chamber pressure high-high	-0.1 inch w.c.	-0.1 in. w.c.
LIC-29	LALL-99/820	Scrubber tower sump level low-low	24 inches above bottom tangent line	24 inches above bottom tangent line
LIC-30	BA-908/912	Flame loss in primary chamber burner	Flame loss	Flame loss
LIC-31	BA-909/913	Flame loss in secondary chamber burner	Flame loss	Flame loss

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
LIC-32	ZS-367A/567A	Slag discharge gate	Open	Open

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

Type Munition And Chemical Agent	Maximum Units/Hr	Feed Interval Per Tray (Min)	Max. Weight Per Tray (lb)[4]	Maximum Feed Rate (lb/hr) VX	GB	HD	Bulk
M 121 A1 Proj, 155 MM (VX)	157	18	6990	47.1	-	-	-
M 121 A1 Proj, 155 MM (GB)	181	16	6990	-	58.8	-	-
M 426 Proj, 8 inch (VX)	81	20	7660	58.7	-	-	-
M 426 Proj, 8 inch (GB)	97	17	7660	-	70.3	-	-
M23 Mine Drum (VX) (empty)	24	20	2530	12.6	-	-	-
MC-1 Bomb (GB)	7.30	16	2620	-	80.3	-	-
MK-94 Bomb (GB)	7.30	16	2710	-	39.4	-	-
Spray Tank TMU-28 (VX)	1	60	3020	67.8	-	-	-
Ton Container (HD)	1.72	35	3360	-	-	146.2	-
Misc. Metal and Ash	4	15	5250[5]	15	15	26	13000
Surrogates	Maximum feed rate 6607 lbs/hr						

[4] The maximum weight per tray includes the weight of the tray.
[5] The Permittee shall move trays above the weight limit into the TMA until a plan for treatment has been submitted to and approved by the Department.

Table 6-5 [RESERVED]

TABLE 6-6 ALLOWABLE EMISSION RATES FROM THE METAL PARTS FURNACE (MPF)

Allowable Emission Rates (grams/second)		
Constituent	CAS No.	MPF
ORGANICS		
TEQ 2,3,7,8-PCDF's [Dioxin & Furan congeners]		9.08E-10
Total Polychlorinated Biphenyls [PCB cong]	1336-36-3	
1,1,2,2-Tetrachloroethane	79-34-5	6.98E-07
1,1-Dichloroethane	75-34-3	8.47E-07
2,4,6-Trinitrotoluene	118-96-7	
2,4-Dinitrotoluene	121-14-2	
2,6-Dinitrotoluene	606-20-2	
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 phthlate	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
HMX	2691-41-0	
Methyl chloroform	71-55-6	1.65E-06
Methyl ethyl ketone	78-93-3	1.58E-04

Allowable Emission Rates (grams/second)		
Constituent	CAS No.	MPF
Methyl isobutyl ketone		6.98E-07
Methylene chloride	75-09-2	1.38E-04
Naphthalene	91-20-3	6.67E-05
Nitroglycerine	55-63-0	
Propylene dichloride	78-87-5	6.98E-07
RDX	121-82-4	
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	1330-20-7	6.98E-07
METALS		
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
ACID GASSES		
Hydrogen Chloride		8.16E-03
Hydrogen Fluoride		1.93E-02
OTHER CONSTITUENTS		
Chlorine		2.57E-02
Particulates		5.04E-02

TABLE 6-7 METAL PARTS FURNACE WASTE-FEED CUTOFF PARAMETERS

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
MPF-01	TIC-152A	MPF temperature zone 1 high-high	1,750°F for projectiles 1,550°F for ton containers	1,800°F for projectiles 1,600°F for ton containers
MPF-02	TIC-141A	MPF temperature zone 2 high-high	1,750°F for projectiles 1,550°F for ton containers	1,800°F for projectiles 1,600°F for ton containers
MPF-03	TIC-153A	MPF temperature zone 3 high-high	1,750°F for projectiles 1,550°F for ton containers	1,800°F for projectiles 1,600°F for ton containers
MPF-04	PAL-159	Natural gas to MPF pressure low	4 psig	4 psig
MPF-05	TAHH-87	MPF afterburner temperature high-high	2,150°F	2,200°F
MPF-06	TALL-87	MPF afterburner temperature low-low	1,850°F	1,800°F
MPF-07	TAHH-223	Quench tower exhaust gas temperature high-high	250°F	250°F
MPF-08	LAHH-244	Scrubber tower sump liquid level high-high	84 in. above bottom tangent line	84 in. above bottom tangent line
MPF-09	LALL-246	Scrubber tower sump level low-low	24 in. above bottom tangent line	24 in. above bottom tangent line
MPF-10	TIC-152 TIC-141 TIC-153	MPF temperature low-low	1,000°F for ton containers 1,400°F for projectiles 1,100°F for bulk	1,000°F for ton containers 1,300°F for projectiles 1,100°F for bulk

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
MPF-11	PALL-138	Combustion air pressure low-low	20 in. w.c.	20 in. w.c.
MPF-12	PDAHH-786	Afterburner flue gas flow rate high-high	1.2 in. w.c.	1.5 in w.c.

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
MPF-13	AAH-384	Afterburner exhaust CO concentration high	100 ppm corrected to 7% O_2, dry basis based on hourly rolling average	100 ppm corrected to 7% O_2, dry basis based on hourly rolling average
MPF-14	PDIT-222	Venturi scrubber pressure drop low-low	20 in. w.c.	18 in. w.c.
MPF-15	FIT-248	Clean liquor to scrubber tower flow rate low-low	600 gpm	600 gpm
MPF-16	AIT-167	Chemical agent emission high-high based on instantaneous measurements	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX
MPF-18	LSHH-02/ 06	Brine surge tanks 101,102. Both levels high-high	18 feet 3-inch level	18 feet 3-inch level
MPF-19	PAH-70	Burnout chamber pressure high	-0.5 in. w.c.	-0.1 in. w.c.
MPF-20	AIT-247	Clean liquor to scrubber tower pH low	8	7.5

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
MPF-21	PAL-258	Clean liquor to scrubber tower pressure low	15 psig	15 psig
MPF-22	FAL-218	Quench brine to venturi scrubber flow rate low-low	100 gpm	90 gpm
MPF-23	DAH-249	Brine density high	80 lb/ft^3	80 lb/ft^3

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
MPF-24	PDAR	Munitions feed rate high	M121A1 (GB) 181 mun/hr M121A1 (VX) 157 mun/hr M426 (GB) 97 mun/hr M426 (VX) 81 mun/hr M23 Mine Drum (VX) empty 24 mun/hr MK-94 Bomb (GB) 7.3 mun/hr MC-1 Bomb (GB) 7.3 mun/hr Ton Container(HD) 1.72 mun/hr Spray Tank TMU-28 (VX) 1 mun/hr Miscellaneous Metal and Ash 13,000 lb/hr Surrogates 6607 lbs/hr	M121A1 (GB) 181 mun/hr M121A1 (VX) 157 mun/hr M426 (GB) 97 mun/hr M426 (VX) 81 mun/hr M23 Mine Drum (VX) empty 24 mun/hr MK-94 Bomb (GB) 7.3 mun/hr MC-1 Bomb (GB) 7.3 mun/hr Ton Container(HD) 1.72 mun/hr Spray Tank TMU-28 (VX) 1 mun/hr Miscellaneous Metal and Ash 13,000 lb/hr Surrogates 6607 lbs/hr
MPF-25	AIT-82	Oxygen content in afterburner exhaust gas high	12% corrected to a dry basis	12% corrected to a dry basis
MPF-26	AIT-82	Oxygen content in afterburner exhaust gas low	7.3% corrected to a dry basis	7.3% corrected to a dry basis

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
MPF-27	PSHH-390	Afterburner pressure high-high	-0.5 in. w.c.	-0.1 in. w.c.

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burns
MPF-28	(10) BA883-892	Flame loss in burnout chamber	MPF Zone 1 all burners out or 2 burners out and zone temperature less than 1400°F. MPF Zone 2 all burners out or 2 burners out and zone temperature less than 1400°F. MPF Zone 3 all burners out or 2 burners out and zone temperature less than 1400°F.	MPF Zone 1 all burners out or 2 burners out and zone temperature less than 1400°F. MPF Zone 2 all burners out or 2 burners out and zone temperature less than 1400°F. MPF Zone 3 all burners out or 2 burners out and zone temperature less than 1400°F.
MPF-29	(2)BA 893/894	Flame loss in afterburner	Flame loss	Flame loss

TABLE 6-8 MAXIMUM FEED RATES TO THE DEACTIVATION FURNACE

Type Munition	Max.	Min. Feed	Maximum Feed Rate (lb/hr)				
And Agent	Units/Hr	Int. (Sec)	VX	GB	HD	Exp.	Prop.
M 55 Rocket (GB)	40	90	-	21.3	-	123.5	767.7
M 55 Rocket (VX)	40	90	19.9	-	-	123.5	767.7
M 121 A1 Proj,155 MM(VX)	120	30	-	-	-	327.0	-
M 121 A1 Proj,155 MM(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	36.7	-	-	55.4	-

Surrogates Maximum feed rate 912 lbs/hr

TABLE 6-9 [RESERVED]

TABLE 6-10 ALLOWABLE EMISSION RATES FROM THE DEACTIVATION FURNACE (DFS)

Allowable Emission Rates (grams/second)		
Constituent	CAS No.	DFS
ORGANICS		
TEQ 2,3,7,8-PCDF's [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-Cresol	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

Allowable Emission Rates (grams/second)		
Constituent	CAS No.	DFS
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
Vinyl acetate	108-05-4	7.33E-07
Vinyl chloride	75-01-4	1.62E-06
Total xylene	1330-20-7	1.58E-05
METALS		
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
ACID GASSES		
Hydrogen Chloride		1.16E-03
Hydrogen Fluoride		1.66E-02
OTHER CONSTITUENTS		
Chlorine		2.22E-02
Particulates		1.81E-02

TABLE 6-11 DEACTIVATION FURNACE SYSTEM WASTE-FEED CUTOFF PARAMETERS

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burn
DFS-01	TAHH-182	Rotary retort temperature high-high (flue gas temperature before spray)	1,900°F	1,950°F
DFS-02	TAHH-08	Flue gas temperature after spray high-high	1,600°F	1,600°F
DFS-03	TAL-08	Flue gas temperature after spray low-low	750°F	750°F
DFS-04	XS-207 XS-209	Jammed chute	Feed chute filled	Feed chute filled
DFS-05	PAHH-204	Pressure in rotary retort combustion chamber high-high	-0.1 inch w.c.	-.05 in. w.c.
DFS-06	TAHH-51A, 51B, 51C, 51D, 51E	Temperature on rotary retort shell high-high	1,600°F	1,600°F
DFS-07	BA-850/851	Afterburner flame loss	Flame loss	Flame loss

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burn
DFS-08	TALL-42	Heated discharge conveyor temperature low-low	1,000°F	1,000°F
DFS-09	XS-58 XS-821	Jam in discharge conveyor	Discharge chute filled	Discharge chute filled

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burn
DFS-10	SAL-57	No motion on heated discharge conveyor	No motion	No motion
DFS-11	PDAH-813	Afterburner exhaust flow rate high	0.9 inch w.c.	1.0 in. w.c.
DFS-12	TALL-182	Rotary retort temperature low-low (flue gas temp before spray)	1,050°F except during start-up feed is allowed at 910°F up to 12 min. to achieve 1,050°F	1,000°F except during start-up feed is allowed at 900°F up to 5 min. to achieve 1,000°F
DFS-13	TAL-197	Afterburner temperature low-low	2,050°F for rockets; 1,850°F for other munitions	1,950°F for rockets 1,750°F for other munitions
DFS-14	TAHH-197	Afterburner temperature high-high	2,350°F for rockets; 2,150°F for other munitions	2,500°F for rockets 2,250°F for other munitions
DFS-15	PDAL-08	Venturi scrubber pressure low-low	20 inch w.c.	18 inch w.c.

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burn
DFS-16	AAH-59	CO level in flue gas high	100 ppm, corrected to 7% O_2 dry basis based on hourly rolling average	100 ppm, corrected to 7% O_2 dry basis based on hourly rolling average

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burn
DFS-17	PDAR	Munitions feed rate high	MM121A1 (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 (GB) 40 mun/hr M55 (VX) 40 mun/hr	MM121A1 (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 (GB) 40 mun/hr M55 (VX) 40 mun/hr
DFS-18	FAL-30	Clean liquor to scrubber tower flow rate low-low	600 gpm	540 gpm
DFS-19	AIT-183	Chemical agent emission high-high based on instantaneous measurements	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX
DFS-20	ACAM-297	Chemical agent emission high-high based on instantaneous measurements in cyclone enclosure	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX
DFS-21	LSHH-02/06	Brine surge tanks 101,102,201,202. Both levels high-high	18 feet 3 inches level	18 feet 3 inches level

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burn
DFS-22	AAL-34	Clean liquor to scrubber tower pH low	8	7.5

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoints During Trial Burn
DFS-23	PAL-36	Clean liquor to scrubber tower pressure low-low	15 psig	15 psig
DFS-24	TSHHH-375	Quench tower exhaust gas temperature high-high	250 F	250 F
DFS-25	FAL-06	Quench brine to venturi scrubber flow rate low-low	189 gpm	170 gpm
DFS-26	DAH-35	Brine density high	80 lb/ft^3	90 lb/ft^3
DFS-27	ST-98	Rotational speed	Shall not exceed 2 rpm	Shall not exceed 2 rpm
DFS-28	AIT-175	Oxygen in afterburner exhaust gas high	13% corrected to a dry basis	13% corrected to a dry basis
DFS-29	AIT-175	Oxygen in afterburner exhaust gas low	8.8% corrected to a dry basis	8.8% corrected to a dry basis
DFS-30	PAH-65	Afterburner pressure high	-0.1 inch w.c.	-0.05 in. w.c.
DFS-31	LAHH-32	Scrubber tower sump level high-high	84 inches above bottom tangent line	84 inches above bottom tangent line
DFS-32	LALL-24	Scrubber tower sump level low-low	24 inches above bottom tangent line	24 inches above bottom tangent line
DFS-33	BA-844	Flame loss in rotary retort	Flame loss	Flame loss

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

TABLE 6-12 MAXIMUM FEED RATES TO THE DUN DURING SHAKEDOWN AND POST TRIAL-BURN

Description of Dunnage	Maximum lb/Hr	Maximum Feed Rate (lb/hr) VX	GB	HD
Wood, Carbon Filters, Carbon Canisters, Mine Containers, Lab Solid Waste Paper, or other similar waste	368 not to exceed more than 92 pounds in any 15 minute period	1.7	1.7	1.7
Surrogates	Maximum 324 lbs/hr not to exceed more than 81 pounds in any 15 minute period			

TABLE 6-13 [RESERVED]

TABLE 6-14 ALLOWABLE EMISSION RATES FROM THE DUNNAGE INCINERATOR (DUN)

Allowable Emission Rates (grams/second)		
Constituent	CAS No.	DUN
ORGANICS		
TEQ 2,3,7,8-PCDF's [Dioxin & Furan congeners]		3.54E-10
Total Polychlorinated Biphenyls [PCB cong]	1336-36-3	1.36E-07
1,1,2,2-Tetrachloroethane	79-34-5	1.67E-06
1,1-Dichloroethane	75-34-3	4.81E-07
2,4,6-Trinitrotoluene	118-96-7	5.95E-07
2,4-Dinitrotoluene	121-14-2	5.95E-07
2,6-Dinitrotoluene	606-20-2	5.95E-07
2-Hexanone	591-78-6	5.95E-06
Acetone	67-64-1	5.75E-02
Benzene	71-43-2	7.61E-05
Benzoic Acid	65-85-0	1.97E-04
Benzyl Alcohol	100-51-6	9.88E-04
Bis(2-ethylhexyl)phthalate	117-81-7	1.49E-04
Bromodichloromethane		2.35E-06
Bromoform	75-22-2	2.75E-05
Carbon disulfide		1.61E-05
Carbon Tetrachloride	56-23-5	6.95E-05
Chlorobenzene	106-90-7	3.12E-06
Chloroform	67-66-3	6.36E-05
Chloromethane	74-87-3	8.97E-04
m-Cresol	108-39-4	8.14E-05
o-Cresol	95-48-7	1.99E-04
p-Cresol	106-44-5	9.30E-05
Di(n)octyl phthlate	117-84-0	4.43E-05
Di-n-butyl Phthalate	84-74-2	8.85E-06
Dibromochloromethane	124-48-1	1.66E-06
(cis)1,3-Dichloropropene	542-75-6	6.86E-04
(trans)1,3-Dichloropropene	542-75-6	7.14E-07
Diethyl Phthalate	84-66-2	4.64E-05
Dimethyl Phthalate	131-11-3	1.85E-04
Ethylbenzene	100-41-4	6.18E-06
HMX	2691-41-0	5.95E-07
Methyl chloroform	71-55-6	2.84E-05

Allowable Emission Rates
(grams/second)

Constituent	CAS No.	DUN
Methyl ethyl ketone	78-93-3	2.37E-04
Methyl isobutyl ketone		7.87E-06
Methylene chloride	75-09-2	9.40E-03
Naphthalene	91-20-3	4.86E-06
Nitroglycerine	55-63-0	1.31E-04
Propylene dichloride	78-87-5	7.96E-04
RDX	121-82-4	5.95E-07
Styrene	100-42-5	3.86E-04
Tetrachloroethylene	127-18-4	1.93E-06
Toluene	106-88-3	4.84E-03
Vinyl acetate	108-05-4	1.11E-06
Vinyl chloride	75-01-4	1.59E-05
Total xylene	1330-20-7	6.04E-06
METALS		
Antimony	7440-36-0	2.57E-05
Arsenic	7440-38-2	3.57E-05
Barium	7440-39-3	6.36E-05
Beryllium	7440-41-7	8.45E-06
Boron	7440-42-8	8.50E-04
Cadmium	7440-43-9	1.57E-05
Chromium	7440-47-3	2.33E-05
Cobalt	7440-48-4	1.28E-05
Copper	7440-50-8	1.40E-05
Lead	7439-2-1	8.88E-05
Manganese	7439-96-5	1.15E-03
Mercury	7440-97-6	1.62E-05
Nickel	7440-02-0	5.64E-05
Phosphorous	7440-14-0	5.50E-04
Selenium	7782-49-2	1.71E-05
Silver	7440-22-4	2.57E-05
Tin	7440-31-5	5.79E-05
Thallium	7440-28-0	8.45E-05
Vanadium	7440-62-2	1.72E-05
Zinc	7440-66-6	3.70E-04
ACID GASSES		
Hydrogen Chloride		5.04E-01
Hydrogen Fluoride		1.49E-02
OTHER CONSTITUENTS		
Chlorine		5.49E-03
Particulates		5.51E-02

Table 6-15 DUNNAGE INCINERATOR WASTE FEED CUTOFF PARAMETERS

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoint During Trial Burn
DUN-01	TAHH-42B	Primary chamber temperature high-high	1,950°F	2,050°F
DUN-02	TALL-42B	Primary chamber temperature low-low	1,350°F	1,250°F
DUN-03	BA-420/421 /422/423	Primary chamber flame loss	Flame loss	Flame loss
DUN-04	TALL-56	Afterburner temperature low-low	1,850°F	1,750°F
DUN-05	PAHH-202	Afterburner pressure high-high	-1.0 inch w.c.	-0.5 in. w.c.
DUN-06	BA-429/ 430	Afterburner flame loss	Flame loss	Flame loss
DUN-07	TAH-38B	Afterburner temperature high-high	2,150°F	2,250°F
DUN-08	PdAHH-390	Afterburner flue gas flow rate high	0.5 inch w.c.	0.6 in. w.c.
DUN-09	AAH-254	CO level in flue gas high	100 ppm corrected to 7% O_2 dry basis based on hourly rolling average	100 ppm corrected to 7% O_2 dry basis based on hourly rolling average

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoint During Trial Burn
DUN-10	ACAM-130	Chemical agent emission high-high based on instantaneous measurements	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX
DUN-12	TSHH-419	Quench tower exhaust gas temperature high-high[6]	400 F	400 F
DUN-13	PAH-39	Primary chamber pressure high-high	-1.0 inch w.c.	-0.5 in. w.c.
DUN-14	PDAH-166	Baghouse differential pressure high	7 inch w.c.	8 in. w.c.
DUN-15	PDI-166	Baghouse differential pressure low	1 inch w.c.	.05 inch w.c.
DUN-16	PDAR	Feed rates	368 lb/hr total 92 lbs/ 15 min. Surrogate 324 lb/hr toral 81 lbs/ 15 min	368 lb/hr total 92 lbs/ 15 min. Surrogate 324 lb/hr toral 81 lbs/ 15 min
DUN-17	AIT-270	HCl in exhaust gas	112.8 ppm	112.8 ppm

[6] When the quench tower exhaust gas temperature exceeds high high temperature, the exhaust gas will flow directly to the carbon PAS bypassing the baghouse.

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown and Post Trial-Burn	Setpoint During Trial Burn
DUN-18	AIT-253	Oxygen content in afterburner exhaust gas high	14% corrected to a dry basis	14% corrected to a dry basis
DUN-19	AIT-253	Oxygen content in afterburner exhaust gas low	8.5% corrected to a dry basis	8.5% corrected to a dry basis
DUN-20	LAH-55	Quench recirculation tank level high	2 feet 5 inches	2 feet 5 inches
DUN-21	02-112-PDAH-648A/B	Prefilter differential pressure high	10 in. w.c.	10 in. w.c.
DUN-22	02-112-PDAH-650A/B	HEPA filter differential pressure high	10 in. w.c.	10 in. w.c.

MODULE VII - INCINERATION - NORMAL OPERATION

Four 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 Incinerator (LICs),
One (1) Metal Parts Furnace (MPF),
One (1) Deactivation Furnace System (DFS), and
One (1) Dunnage Incinerator (DUN).

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".) Another stack is provided for the DUN incinerator.

Liquid chemical agents drained from munitions, 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 DUN.

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

Section VII.A. - Conditions Applicable to All Incinerators
Section VII.B. - Liquid Incinerators (LICs)
Section VII.C. - Metal Parts Furnace (MPF)
Section VII.D. - Deactivation Furnace System (DFS)
Section VII.E. - Dunnage Incinerator (DUN)
Section VII.F. - Combined Stack for the LICs, MPF and DFS

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 provided for in permit condition II.N. 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, or waste containing one chemical agent, shall be fed to any incinerator, at any given time.

ii. The Permittee shall not incinerate any chemical agent, or any waste containing the chemical agent, in which treatment has not been successfully demonstrated through a chemical agent trial burn, in accordance with Module VI.

VII.A.3. INSPECTION REQUIREMENTS

i. The Permittee shall inspect each incinerator in accordance with the inspection schedule and requirements of Attachment 3 of this permit.

ii. The inspection data for each incinerator shall be recorded, and the records shall be placed in the operating record for the respective incinerator, in accordance with permit condition II.I.

VII.A.4. 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. [40 CFR 244.347 (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_2) 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 Part 266 APPENDIX IX.

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), and chemical agent stack gas 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);

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 and annual CEM Performance Specification Tests conducted in accordance with permit condition VII.A.4.iii. within 30 calendar days of the date of the tests.

iii. If any sampling and testing result show that any emission rate specified in Table 7-9 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 off-set 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 incinerators(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)].

VII.A.6. CLOSURE

At closure, the Permittee shall follow the procedures in the Closure Plan, Volume XII, Section I of the Application as revised in accordance with permit condition II.J.3.

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 cutoffs 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 cutoff function failures, including the corrective measures taken to correct the condition that caused the failure.

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 demister.

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 shut down 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 condition VII.B.4., shall be equipped with alarms operated to warn of deviation, or imminent deviation, from the limits specified in permit condition VII.B.4.

ii. The Permittee shall install and test all process monitoring and control instrumentation for each LIC in accordance with the design plans in Volume II, Section D-5 and Volume VII, Attachment D-3, Section D-5b of the Application and in accordance with the calibration, performance specifications and maintenance procedures contained in Table 7-1 of this permit.

iii. Modifications to the LIC design plans and specifications in the Application for all incinerators shall be allowed only in accordance with permit condition II.A.2.

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. The 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 the common stack, corrected to 7% oxygen in accordance with the formula given below [40 CFR §264.343 and 40 CFR §270.32(b)(2)], 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 in the stack gas

iii. The hydrogen chloride (HCl) emission from the combined LIC shall not exceed 3.81×10^{-2} grams per second.

iv. The emission rates from the combined LICs shall not be exceed the limits specified in Table 7-9. 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 LICs in accordance with permit condition VII.A.5.iii.

v. The above emission limits (Table 7-9) shall be met by limiting the feed rate as specified in permit condition VII.B.3.i.

vi. The Permittee shall control emissions of products of incomplete combustion (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.

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

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:

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

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.1.i. through VII.B.1.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

i. Except during the short-term periods specified in permit conditions VI.B. for shakedown, trial burn, and post-trial burn, 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 HAZARDOUS WASTES	MAX. FEED RATE HOURLY ROLLING AVERAGE
Chemical Agents:	
VX	* 680 lbs/hr.
GB	* 1,030 lbs/hr.
HD	* 1,305 lbs/hr.
Surrogate 1,032 lb/hr	
Decontamination Solution, and Monitoring Support Building and Laboratory, Aqueous Liquid Wastes:	* lbs/hr.

* May be changed due to results of trial burns. (See Module VI)

ii. The spent decontamination solution and the Monitoring Support Building and Laboratory aqueous liquid wastes shall be fed only into the secondary combustion chamber of each LIC with, or without, the chemical agent feed to each LIC primary combustion chamber.

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.

VII.B.4. OPERATING CONDITIONS

i. During normal operations, the Permittee shall operate each LIC in order to maintain the system and process parameters listed in Table 7-1 of this permit within the ranges or setpoints specified in Table 7-1 of this permit.

ii. During normal operations, 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.

VII.B.5. MONITORING REQUIREMENTS

i. The Permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment as specified in Table 7-1 and 7-2 of this permit, while incinerating hazardous waste.

ii. Hazardous wastes shall not be fed to each LIC if any of the monitoring instruments listed in Table 7-1 and 7-2 of this permit fails to operate properly.

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 staged shut down of each LIC in accordance with the approved procedures specified in Volume II, Section D-5 and Volume VII, Attachment D-3, Section D-5b of the Application when the operating conditions deviate from the limits specified in permit Condition VII.B.4. 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 lockout the waste feed, and perform staged shut down of each LIC in accordance with the approved procedures specified in Volume II, Section D-5 and Volume VII, Attachment D-3, Section D-5b of the Application. The Permittee shall not restart the 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 cutoff or lockout is/are restored to permit limits and all other parameters are within permit limits.

iv. If the number of automatic waste feed cutoffs 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 cutoff 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.

VII.C. METAL PARTS FURNACE (MPF)

The Metal Parts Furnace (MPF) treats drained projectiles, bulk items, mine drums, cyclone residue, carbon High Efficiency Particulate (HEPA) filters and strainers 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 metals 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, demister and a carbon bed.

VII.C.1. MAINTENANCE

i. All process monitors required, pursuant to permit condition VII.C.4., shall be equipped with alarms operated to warn of deviation, or imminent deviation, from the limits specified in permit condition VII.C.4.

ii. The Permittee shall install and test all process monitoring and control instrumentation for the MPF in accordance with the design plans in Volume II, Section D-6 and Volume VII, Attachment D-3, Section D-6b of the Application 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 design plans and specifications in the Application for all incinerators shall be allowed only in accordance with permit condition II.A.2.

VII.C.2. PERFORMANCE STANDARDS

i. The MPF shall 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 and 40 CFR §270.32(b)(2)), 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 ppm (dry volume)
Y = measured O_2 in the stack gas

iii. The HCl emissions from the MPF shall not exceed 8.16×10^{-3} grams per second.

iv. The emission rates from the MPF shall not be exceed the limits specified in Table 7-9. 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 LICs in accordance with permit condition VII.A.5.iii.

v. The above emission limits shall be met by limiting the feed rate of each metal into the MPF as specified in permit conditions VII.C.3.i.

vi. 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.

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

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:

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

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.B.4. is not sufficient to ensure compliance with the performance standards specified in permit conditions VII.B.1.i. through VII.B.1.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

i. Except during the short-term periods specified in permit conditions VI.C. for shakedown, trial burn, and post-trial burn, 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.

Type Munition And Chemical Agent	Maximum Units/Hr*	Feed Int./ Tray Min)*	Max. Wt./ Tray (lb)[7]	Maximum Feed Rate* (lb/hr) VX	GB	HD	Bulk
M 121 A1 Proj, 155 MM(VX)	157	16	6990	47.1	-	-	-
M 121 A1 Proj, 155 MM(GB)	181	16	6990	-	54.3	-	-
M 426 Proj, 8 inch (VX)	81	16	7660	58.7	-	-	-
M 426 Proj, 8 inch (GB)	97	16	7660	-	70.3	-	-
MC-1 Bomb (GB)	7.30	16	2620	-	80.3	-	-
MK-94 Bomb (GB)	7.30	16	2710	-	39.4	-	-
Spray Tank TMV-28 (VX)	1	31	3020	67.8	-	-	-
Ton Container (HD)	1.72	31	3360[8]	-	-	-	146.2
Misc. Metal and Ash	4	15	5250	15	15	26	13000

[7] The maximum weight per tray includes the weight of the tray.
[8] The Permittee shall move trays above the weight limit into the TMA until a plan for treatment has been submitted to and approved by the Department.

*May change due to results of trial burn. (See Module VI)

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, in accordance with the Waste Analysis Plan in Attachment 2 of this permit.

iii. The hourly feed rate of the residual chemical agent contained in the MPF feed, which was calculated, assuming a 5% heel, from the amount of chemical agent in the munitions, shall not exceed the limits provided in Table 7-4 and permit condition VII.C.3.i., unless the following conditions are met:

a. The Permittee has provided the Department verbal notice of the following:

(I) The detection of a munition that can not be drained to a 5% or less residual chemical agent heel indicating, its type and its location (i.e., process line leading to furnace, temporary holding location).

(II) The percent chemical agent heel remaining in the munition.

(III) Efforts expended to facilitate additional draining of the munition.

b. The Permittee has provided the Department written procedures for processing of the munition that can not be drained to a 5% or less residual chemical agent heel to reduce its vaporization rate in the MPF to the rate which would be produced by the feedrate allowed in Table 7-4 and permit condition VII.C.3.i. These procedures must be consistent with the procedures specified in Attachment 4 of this permit with the following exceptions:

(I) The temperature and residence time in zones 1,2, and 3 will be specified based on the development of a vaporization curve and

calculations for the munition type and the quantity and type of residual chemical agent remaining, which does not exceed the vaporization rate which would be produced by the feedrate allowed in Table 7-4 and permit condition VII.C.3.i. The supporting vaporization curve and calculations shall be provided with the procedures to the Department.

(II) The temperature maintained in the afterburner shall be in accordance with Table 7-4 and permit condition VII.C.3.i.

c. The Permittee receives approved procedures from the Department for processing the munition that cannot be drained to a 5% or less residual chemical agent heel.

VII.C.4. OPERATING CONDITIONS

i. During normal operations, 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 ranges or setpoints specified in Table 7-3 of this permit.

ii. During normal operations, 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.

VII.C.5. MONITORING REQUIREMENTS

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.

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 staged shut down of the MPF, in accordance with the approved procedures specified in Volume II, Section D-6 and Volume VII, Attachment D-3, Section D-6b of the Application, when the operating conditions deviate from the limits specified in permit condition VII.C.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 staged shut down of the MPF in accordance with the approved procedures specified in Volume II, Section D-6 and Volume VII, Attachment D-3, Section D-6b of the Application. The Permittee shall not restart the 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 cutoff or lockout 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 cutoffs 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 cutoff 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.

VII.D. DEACTIVATION FURNACE SYSTEM (DFS)

The DFS incinerates fuzes, explosives and propellants from drained rockets, mines and other munitions. 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 demister.

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 Volume II, Section D-7 and Volume VII, Attachment D-3, Section D-7B of the application 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 design plans and specifications in the Application for all incinerators shall be allowed only in accordance with permit condition II.A.2.

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 and 40 CFR §270.32(b)(2)), 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 ppm (dry volume)
Y = measured O_2 concentration in the stack gas

iii. The HCl emissions from the DFS shall not exceed 1.16×10^{-3} grams per second

iv. The emission rates from the DFS shall not be exceed the limits specified in Table 7-9. 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 LICs in accordance with permit condition VII.A.5.iii.

v. The emission limits in Table 7-9 shall be met by limiting the feed rate of each metal into the DFS as specified in permit condition VII.D.3.i.

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.

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

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:

Chemical Agent - Concentration (mg/m^3)

Chemical Agent - Concentration (mg/m^3)

	VX	GB	HD
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.1.i. through VII.D.1.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.

Type Munition And Chemical Agent	Max. Units/Hr*	Min.Feed Int.(Sec)*	Maximum Feed Rate(lb/hr)* VX	GB	HD	Exp.	Prop.
M 55 Rocket (GB)	40	90	-	21.3	-	123.5	767.7
M 55 Rocket (VX)	40	90	19.9	-	-	123.5	767.7
M 121 A1 Proj,155 MM(VX)	160	23	-	-	-	327.0	-
M 121 A1 Proj,155 MM(GB)	160	23	-	-	-	327.0	-
M 426 Proj, 8 inch(VX)	57	64	-	-	-	339.8	-
M 426 Proj, 8 inch(GB)	57	64	-	-	-	339.8	-
M 23 Landmine(VX)	70	52	36.7	-	-	55.4	-

*May change due to results of trial burns. (See Module VI)

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. During normal operations, 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 ranges or setpoints specified in Table 7-5 of this permit.

ii. During normal operations, 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; or at all times when a rocket piece is at the blast gate and the gate is jammed. The flowrate of the decontamination solution or process water to the rocket shear blade will be continuously monitored and recorded during rocket processing operations. [40 CFR 270.32(b)(2)]

VII.D.5. MONITORING REQUIREMENTS

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.

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 staged shut down of the DFS in accordance with the approved procedures specified in Volume II, Section D-7 and Volume VII, Attachment D-3, Section D-7b of the Application when the operating conditions deviate from the limits specified in permit condition VII.D.4. unless the deviation automatically

activates the waste feed cutoff and/or lockout sequence specified in permit condition VII.D.6.i.

iii. In case of a malfunction of the automatic waste feed cutoff 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 staged shut down of the DFS in accordance with the approved procedures specified in Volume II, Section D-7 and Volume VII, Attachment D-3, Section D-7b of the Application. The Permittee shall not restart the 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 cutoff or lockout is/are restored to permit limits and all other parameters are within permit limits.

iv. If the number of automatic waste feed cutoffs 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 cutoff 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.

VII.E. DUNNAGE INCINERATOR (DUN)

The DUN is designed to incinerate wood pallets, monitoring support and laboratory solids, carbon, carbon canisters, and other miscellaneous solid wastes, some of which may be contaminated with chemical agents. The DUN consists of two separate chambers, the primary chamber and the afterburner. The primary chamber is provided with a ram feed system capable of handling bulk solid waste.

The pollution abatement system of the DUN consists of a quench tower, a bag house, and a carbon bed filter. The flue gas leaving the DUN stack is continuously monitored for the presence of chemical agents and other emissions.

VII.E.1. MAINTENANCE

i. All process monitors required, pursuant to permit condition VII.E.4., shall be equipped with alarms operated to warn of deviation, or imminent deviation, from the limits specified in permit condition VII.E.4.

ii. The Permittee shall install and test all process monitoring and control instrumentation for the DUN in accordance with the design plans in Volume II, Section D-8 and Volume VII, Attachment D-3, Section D-8b of the Application and in accordance with the performance specifications and maintenance procedures contained in Table 7-7 of this permit.

iii. Modifications to the design plans and specifications in the Application for all incinerators shall be allowed only in accordance with permit condition II.A.2.

iv. The Permittee shall maintain the DUN 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.E.2.i. through VII.E.2.vii.

VII.E.2. PERFORMANCE STANDARDS

i. The DUN 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 emission from the DUN stack, corrected to 7% oxygen in accordance with the formula give below (40 CFR §264.343 and 40 CFR §270.32(b)(2)), 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 ppm (dry volume)

Y = measured O_2 in the stack gas

iii. The HCl emission from the DUN stack shall not exceed 5.04×10^{-1} grams per second.

iv. The emission rates from the DFS shall not be exceed the limits specified in Table 7-9. 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 LICs in accordance with permit condition VII.A.5.iii.

v. The above emission limits shall be met by limiting the overall feed rate into the DUN as specified in permit condition VII.E.3.i.

vi. The Permittee must control emission of PICs from the DUN stack such that the CO level in the DUN 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.

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

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 DUN. The emission levels shall not exceed the following concentrations:

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

All Federal Title 40 CFR citations are Oregon Rule as adopted by OAR 340-100-002

viii. Compliance with the operating conditions specified in permit condition VII.E.4. shall be regarded as compliance with the required performance standards identified in permit conditions VII.D.E.i. through VII.E.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.E.4. is not sufficient to ensure compliance with the performance standards specified in permit conditions VII.E.1.i. through VII.E.1.vii., the permit may be modified, revoked, or reissued, pursuant to 40 CFR §270.41. [40 CFR 270.32(b)(2)]

VII.E.3. LIMITATION ON WASTE FEED

i. Except during the short-term periods specified in permit conditions VI.E. for shakedown, trial burn, and post-trial burn, the Permittee shall incinerate only the following hazardous wastes at the stated feed rate in the DUN, in compliance with the operating requirements specified in permit condition VII.E.4.

Description of Dunnage	Maximum lb/Hr*	Maximum Feed Rate (lb/hr)* VX	GB	HD
Wood, Carbon Filters, Carbon Canisters, Mine Containers, Lab Solid Waste Paper, or other similar waste	368 not to exceed more than 92 pounds in any 15 minute period	1.7	1.7	1.7

*May change due to results of trial burn. (See Module VI)

ii. Notwithstanding the waste feed limits specified in permit condition VII.E.3.i., the Permittee shall not feed more than 92 pounds of dunnage into DUN in any given fifteen-minute period. The frequency of ram feed shall not be more than four (4) times per hour.

iii. Throughout operation, the Permittee shall conduct sufficient analysis of the waste treated in DUN 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.

VII.E.4. OPERATING CONDITIONS

i. During normal operations, the Permittee shall operate the DUN in order to maintain the system and process parameters listed in Table 7-7 of this permit within the ranges or setpoints specified in Table 7-7 of this permit.

ii. During normal operations, the Permittee shall operate the AWFCO systems, specified in Table 7-8 of this permit, to automatically cut off and or lock out the hazardous waste feed to the DUN when the monitored operating conditions deviate from the setpoints specified in Table 7-8 of this permit.

iii. Any metal waste fed into the DUN shall remain in the primary chamber, maintained above 1000 °F, for a minimum period of 15 minutes, before discharged from the primary chamber.

iv. The DUN primary chamber shall be operated to minimize residue build-up, including opening the horizontal sliding gate, removing the vertical drop chutes, and waste bin change outs.

VII.E.5. MONITORING REQUIREMENTS

i. The Permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment as specified in Tables 7-7 and 7-8 of this permit, while incinerating hazardous waste.

ii. Hazardous wastes shall not be fed to the DUN if any of the monitoring instruments listed in Tables 7-7 and 7-8 of this permit fails to operate properly.

VII.E.6. WASTE FEED CUT-OFF REQUIREMENTS

i. The Permittee shall construct and maintain the systems specified in Table 7-8 of this permit, to automatically cut off and/or lock out the hazardous waste feed to the DUN when the monitored operating conditions deviate from the setpoint specified in the Table 7-8 of this permit.

ii. In case of a malfunction of the AWFCO systems listed in Table 7-8 of this permit, the Permittee shall immediately, manually, cut off and/or lock out the waste feed and perform staged shut down of the DUN in accordance with the approved procedures specified in Volume II, Section D-8 and Volume VII, Attachment D-3, Section D-8b of the Application. The Permittee shall not restart the 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 cutoff or lock out is/are restored to permit limits and all other parameters are within permit limits.

iii. The Permittee shall manually cut off the waste feed and perform staged shut down of the DUN, in accordance with the approved procedures specified in Volume II, Section D-8 and Volume VII, Attachment D-3, Section D-8b, when the operating conditions deviate from the limits specified in permit condition VII.E.4., unless the deviation automatically activates the waste feed cut-off sequence specified in permit condition VII.E.6.i.

iv. If the number of automatic waste feed cutoffs from an individual parameter on Table 7-8 for the DUN 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 cutoff is tripped, the Permittee shall be required to establish and maintain operating limits as specified in Table 7-8 for at least 15 minutes prior to restart of hazardous waste feed to the DUN.

VII.F. COMMON STACK FOR LIC, MPF, & DFS

VII.F.1. The Permittee shall install and maintain the CEMs for oxygen, carbon monoxide, and ACAM monitoring for chemical agent emissions from the common stack.

VII.F.2. The exhaust gas monitoring systems specified in permit condition VII.F.1., shall be calibrated, inspected and operated in accordance with the applicable subparagraphs of permit conditions VII.A.5 and VII.A.6.

VII.F.3. The chemical agent emissions from the common stack, monitored as specified in permit condition VII.F.2., shall not exceed the following concentrations:

	Chemical Agent - Concentration (mg/m^3)		
Stack Emission	0.0003	0.0003	0.03

VII.F.4. The waste feeds to all contributing incinerator(s) shall be automatically cutoff or locked out when the chemical agent emission level(s) in the common stack exceeds the values specified in permit condition VII.F.3.

TABLE 7-1 LIQUID INCINERATOR SYSTEM INSTRUMENT AND PROCESS PARAMTERS

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Range or SetPoint	Accuracy	Calibration Method No. and Frequency[a]
1c	Fuel Gas to Primary Chamber LIC-FURN-101/201 FIC-120/749	Mass	In-Line	0-2,000 scfh	250-1,250 scfh	±3% of Full Scale	Inst. Calib. Para. 2.3
2b,c,d	Chemical Agent from TOX to LIC-FURN-101/201 FIC-127/731	Mass Flowmeter Vibrating U-Tube Type	In-Line	0-2,000 lb/hr	200-1,330 lb/hr	±0.40% of Full Scale	Inst. Calib. Para. 2.3
3c	Combustion Air to LIC-FURN-101/201 FFIC-42/743	Annubar & D/P Cell	In-Line	0-250,000 scfh	50,000 to 157,000; scfh	±4% of Full Scale	Inst. Calib. Para 2.3
4b,c,d	Spent Decon. To Sec.Chamber LIC-FURN-102/202 FIC-102/763	Mass Flowmeter Vibrating U-tube	In-Line	0-6 gpm	3.3-4.0 gpm	±0.5% of Range	Inst. Calib. Para. 2.3
5c	Fuel Gas to Sec.Chamber LIC-FURN-102/202 FIC-70/787	Orifice Plate & D/P Cell	In-Line	0-4,000 scfh	0-3,700 scfh	±3% of Full Scale	Inst. Calib. Para 2.3
6c	Combustion Air to LIC-FURN-102/202 FFIC-50/788	Annubar & D/P Cell	In-Line	0-80,000 scfh	15,000-52,000 scfh	±4% of Full Scale	Inst. Calib. Para. 2.3
7b,c,d	Primary Chamber LIC-Furn-101/201 Pressure PIC-52/845	Diaphragm	Incinerator	-5 to +1 in. w.c.	-3 to -0.1 in. w.c.	±0.25% of Span	Inst. Calib. Para. 2.2
8b,c,d	Primary Chamber LIC-Furn-101/201 Flue Gas Temp. TIC-43/752	Thermo-couple	In-Line	0-4,000 F	2,550-2,850 F	±0.375% of Range	Inst. Calib. Para. 2.4
9b,c,d	Sec.Chamber LIC-Furn-102/202 Flue Gas Temp. TIC-103/781	Thermo-couple	Incinerator Outlet	0-3,000 F	1,850-2,150F	±0.375% of Range	Inst. Calib. Para. 2.4

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Range or SetPoint	Accuracy	Calibration Method No. and Frequency[a]
10[c]	Intentionally left blank						
11[b,c,d]	Sec.Chamber LIC-FURN-102/202 Exhaust Gas Flow Rate PDIT-854/855	Orifice & D/P Cell	Online	0-1 in. w.c.	0.7 in. w.c.	±0.5% of Span	Inst. Calib. Para. 2.3
12[c]	Primary Chamber LIC-Furn-101/201 Exhaust Gas O_2 AI-132/756	Zirconium Oxide Cell Analyzer	In-Line (Extractive)	0-25%	8.0 to 12.0%	±2% of Range	Inst. Calib. Para. 1.1 & 1.2
13[c]	Primary Chamber LIC-Furn-101/201 Exhaust Gas CO AI-228/851	Infrared Cell Analyzer	In-Line (Extractive)	0-100 & 0-1,000 ppm	0-50 ppm	±1% of Range	Inst. Calib. Para. 1.1 & 1.2
14[b,c,d]	LIC. Sec. Chamber LIC-Furn-101/201 Exhaust Gas O_2 AI-229/798	Zirconium Oxide Cell Analyzer	In-Line (Extractive)	0-25%	6.0 to 20.8%	±2% of Range	Inst. Calib. Para. 1.1 & 1.2
15[b,c,d]	LIC. Sec. Chamber LIC-Furn-101/201 Exhaust Gas CO AI-83/778	Infrared Cell Analyzer	In-Line (Extractive)	0-100 & 0-1,000 ppm	0-200 ppm	±1% of Range	Inst. Calib. Para. 1.1 & 1.2
16[b,c,d]	Quench Tower PAS-Towr-104/204 Exhaust Gas Temp. high-high TSHHH-396/817	Filled System	In-Line	95 F to 300 F	140 F to 200 F	±1% of Setpoint	Inst. Calib. Para. 2.4
17[b,c,d]	LIC Purge Brine Density DIC-83/835	Magnetically Vibrated Tube	Pump DAS-Pump-211/212 Disch.	30-100 lb/ft^3	62.8-80.0 lb/ft^3	±0.25% of Span	Inst. Calib. Para. 2.5
18[c]	Quench Brine to Quench Tower PAS-TOWR-104/204 FIC-84/827	Electro-magnetic Flowmeter	In-Line	0-150 gpm	80-85 gpm	±0.5% of Range	Inst. Calib. Para. 2.3
19[b,c,d]	Quench Brine to Venturi Scrubber PAS-SEPA 103/203 FIC-88/828	Electro-magnetic Flowmeter	In-Line	0-200 gpm	100-120 gpm	±0.5% of Range	Inst. Calib. Para. 2.3

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Range or SetPoint	Accuracy	Calibration Method No. and Frequency[a]
20[b,c,d]	Brine Liquor To Scrubber Tower Sprays FIC-112/825	Electro-magnetic Flowmeter	In-Line	0-1,500 gpm	600-800 gpm	±0.5% of Range	Inst. Calib. Para. 2.3
21[c]	Quench Tower PAS-TOWR-104/204 Level LI-132/810	D/P Cell	Vessel	0-36 in. w.c.	6 in. from bottom tangent line to 42 in. from bottom tangent line	±0.25% of Span	Inst. Calib. Para 2.3
22[c]	Scrubber Tower PAS-SCRB-103/203 Tray Level LIC-113/824	D/P Cell	Vessel	0-48 in. w.c.	6 in. above tray to 54 in. above tray	±0.25% of Span	Inst. Calib. Para 2.3
23[c]	Scrubber Tower Bottom Level LIC-115/818	D/P Cell	Vessel	0-60 in. w.c.	24 in. from bottom tangent line to 84 in. from bottom tangent line	±0.25% of Span	Inst. Calib. Para. 2.3
24[c]	Demister Vessel PAS-DMIS-101/201 Bottom Level LIC-143/864	D/P Cell	Vessel	0-12 in. w.c.	8 in. above Vessel bottom to 20 in.above Vessel bottom	±0.25% of Span	Inst. Calib. Para 2.3
25[b,c,d]	Venturi Scrubber Diff. Pressure PDIC-90/814	D/P Cell	Venturi Scrubber	0-60 in. w.c.	20-40 in. w.c.	±0.25% of Span	Inst. Calib. Para. 2.3
26[b,c,d]	Brine From Scrubber Tower PAS-SCRB-203 pH AIC-91/831	Electrodes	Discharge From Pump 211/212	0-14 pH units	7.0 to 10.0 pH units	±0.01 pH Unit	Inst. Calib. Para. 2.5
27[c]	Clean Liquor pH AIC-716/832	Electrode	Pump PAS-Pump-213/-214 Disch. to Suction	0-14 pH units	6-10 pH units	±0.01 pH Unit	Inst. Calib. Para. 2.5
28[c]	Brine Density DIC-117/826	Magneticall y Vibrated Tube	Pump PAS-Pump-213/-214 Disch. to Suction	60-100 lb/ft^3	62.0-80 lb/ft^3	1.0% of Span	Inst. Calib. Para 2.5

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Range or SetPoint	Accuracy	Calibration Method No. and Frequency[a]
29[c]	Demister Water pH AI-657/861	Electrodes	Pump PAS-Pump-131/-132 Disch. to Suction	0-14 pH units	7.0-10.0 units	±0.01 pH Unit	Inst. Calib. Para. 2.5
30[c]	Demister PAS-DMIS-101/201 Demist. Element Diff PRL 05 PDI-147/867	D/P Cell	Vessel	0-10 in. w.c.	3-10 in. w.c.	±0.25% of Range	Inst. Calib. Para 2.3
31[b,c,d]	Exhaust Blower PAS-BLOW-104/204 Exhaust Gas CO AI-78/716	Infrared Cell Analyzer	Blower Exhaust Line (Extractive)	0-100 & 0-1,000 ppm	0-50 ppm	±1% of Range	Inst. Calib. Para. 1.1 & 1.2
32[c]	Exhaust Blower PAS-BLOW-104 Exhaust Gas O_2 AI-210/717	Zirconium Oxide Cell Analyzer	Blower Exhaust Line (In-Situ)	0-25%	6.0-18%	±2% of Range	Inst. Calib. Para. 1.1 & 1.2
33[b,c,d]	Exhaust Blower PAS-BLOW-104/204 Exhaust Gas Agent MON ACAM-134/163	Gas Chromatograph	Blower Exhaust Line (Extractive)	See Attachment D-2	See Attachment D-2	1% Repeatability	See Attach-ment D-2
34[b,c,d]	Brine Surge Tanks 101,102,201,202 Level LIT-703/707/03/07	Orifice & D/P Cell	Brine Surge Tanks	0-20 feet	0-18 feet 3 inches	±25% of Span	Inst. Calib. Para. 2.3
35	Scrubber Tower Brine Pressure PIT-100/838	D/P Cell	In-Line	0-25 psig	10-20 psig	±0.25% of Span	Inst. Calib. Para. 2.3
36	Process Water/Spent Decon. Pressure Low PSL-51/765	Diaphragm	In-Line LIC-SEC.	0-200 psig	65 psig	2% of Span	Inst. Calib. Para. 2.2
37	Combustion Air to Sec. Chamber Burner Pressure Low-Low PSLL-200/795	Diaphragm	In-Line LIC-SEC.	0-100 in. w.c.	47 in. w.c.	2% of Span	Inst. Calib. Para. 2.2
38	Atomizing Air Pressure Low-Low PALL-127A/127B	Diaphragm	In-Line LIC-PRIM.	0-150 psig	12 psig	2% of Span	Inst. Calib. Para. 2.2

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Range or SetPoint	Accuracy	Calibration Method No. and Frequency[a]
39	Brine Surge Tanks Level High-High LSHH-702/706/02/06	Light Signal	Brine Surge Tanks	On/Off	18 ft. 3 in. from bottom	2% of Span	Inst. Calib. Para. 2.3
40[b,c,d]	Sec. Chamber LIC- FURN-102 Pressure PI-888/896	Diaphragm	Incinerator	-5 to +1 in. w.c.	-3 to -0.1 in. w.c.	±0.25% of Span	Inst. Calib. Para. 2.2
41	Presence of Flame Primary Chamber BA-908/912	Flame Detector	Burner	N/A	N/A	N/A	N/A
42	Presence of Flame Sec.Chamber BA-913/914	Flame Detector	Burner	N/A	N/A	N/A	N/A

NOTES:

[a] See Attachment D-1 of the Application for "Process Instrument Calibration," "Oxygen and Carbon Monoxide Analyzer Calibration," and "Quality Assurance/Quality Control Data Forms." See also Operating and QA/QC procedures found in "Laboratory Quality Assurance Program for the Chemical Stockpile Disposal Program, November 1988" and Attachment D-1 of the Application, "Stack Gas Sample Conditioning System." Additional operating and QA/QC procedures for the Automatic Continuous Air Monitoring System (Item No. 33 above) are in Attachments D-2 and F-1 of the Application.

[b] Continuous monitoring.

[c] Continuous recording.

[d] Maintenance, at a minimum, in accordance with equipment manufacturer's recommendations.

D/P = differential pressure
N/A = not applicable

TABLE 7-2 LIQUID INCINERATOR WASTE-FEED CUTOFF PARAMETERS

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
LIC-01	PAHH-243/845	Primary chamber pressure high-high	-0.1 inch w.c.
LIC-02	TAH-43/752	Primary chamber exhaust temperature high	* 3,000 °F
LIC-03	TALL-43/752	Primary chamber exhaust temperature low-low	* 2,500 °F
LIC-04	PAL-51/765	Process water/spent decontamination solution feed pressure low	* 65 psig
LIC-05	PALL-760/112	Chemical agent feed pressure low	* 5 psig
LIC-06	TALL-192/782	Secondary chamber exhaust temperature low-low	* 1,800 °F
LIC-07	TAHH-613/713	Secondary chamber temperature high-high	* 2,200 °F
LIC-08	PALL-200/795	Combustion air to secondary chamber burner pressure low-low	36 inches w.c.
LIC-09	PDAH-854/855	Flue gas flow rate in the secondary chamber exhaust high	* 0.5 in w.c.
LIC-10	FDAH-127/731	Surrogate and chemical agent feed rate high-high base on hourly rolling average (not to exceed 2% of hourly feed rate per min to maintain steady state)	* Surrogate 1,032 lb/hr 18 lb/min VX 680 lb/hr 12 lb/min GB 1,030 lb/hr 18 lb/min HD 1,305 lb/hr 23 lb/hr
LIC-11	FAHH-102/763	Process water/spent decontamination solution feed rate high-high	* 2,000 lb/hr, maximum; to be adjusted periodically or as necessary to metals and chlorine limitations

* May be modified due to results from trial burns

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
LIC-12	AAHH-83/778	Secondary chamber exhaust CO concentration high-high	100 ppm corrected to 7% O_2, dry basis based on hourly rolling average
Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
LIC-13	PALL-127A/ 127B/737A/ 737B	Primary atomizing air pressure low-low	* 12 psig
LIC-14	PAL-809	Secondary atomizing air pressure low-low	* 47 psig
LIC-15	PDIT-90/814	Venturi scrubber pressure drop low-low	* 20 in. w.c.
LIC-16	FAL-112/825	Clean liquor flow rate to scrubber tower low-low	* 690 gpm
LIC-17	AIT-134/163	Chemical agent emission high-high based on instantaneous measurement	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX
LIC-19	LSHH-06 and LSHH-02	Brine surge tanks 101,102,201,202. Both levels high-high	18 feet 3-inch level
LIC-20	AAL-116/832	Clean liquor to scrubber tower pH low	* 7.5
LIC-21	PAL-129/839	Clean liquor to scrubber tower pressure low	* 15 psig
LIC-22	TSHHH-396/ 817	Scrubber inlet temperature (quench tower exhaust gas temperature) high-high-high	* 250 °F
LIC-23	FAL-88/828	Quench brine to venturi scrubber flow rate low	* 100 gpm

* May be modified due to results from trial burns

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
LIC-24	DAH-117/826	Brine density high	* 90 lb/ft^3
LIC-25	LSHH-99/820	Scrubber tower sump liquid level high-high	84 inches above bottom tangent line
LIC-26	AIT-229/798	Oxygen concentration in sec.chamber exhaust gas high	* 12% corrected to a dry basis

* May be modified due to results from trial burns

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
LIC-27	AIT-229/798	Oxygen concentration in sec.chamber exhaust gas low	* 12% corrected to a dry basis
LIC-28	PSHH-888/896	Secondary chamber pressure high-high	-0.1 inch w.c.
LIC-29	LALL-99/820	Scrubber tower sump level low-low	* 24 inches above bottom tangent line
LIC-30	BA-908/912	Flame loss in primary chamber burner	Flame loss
LIC-31	BA-913	Flame loss in secondarychamber burner	Flame loss
LIC-32	ZS-567A	Slag discharge gate	Open

* May be modified due to results from trial burns

TABLE 7-3 METAL PARTS FURNACE INSTRUMENT AND PROCESS PARAMETERS

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range	Accuracy	Calibration Method No. and Frequency[a]
1[c]	Fuel Gas to Afterburner MPF-Furn-102 FIC-409/429	Mass Flow	In-Line	0-6,000 scfh	70-4,164 scfh	±3% of Full Scale	Ins. Calib. Para. 2.3
2[c]	Combustion Air to Afterburner MPF-Furn-102 FIC-402/422	Mass Flow	In-Line	0-250,000 scfh	1,980-158,460 scfh	±4% of Full Scale	Inst. Calib. Para. 2.3
3[c]	Fuel Gas to Metal Parts Furnace Zone 1 FIC-209/229/ 249/269	Mass Flow	In-Line	0-3,500 scfh	32-2,060 scfh	±3% of Full Scale	Inst. Calib. Para. 2.3
4[c]	Combustion Air To Metal Parts Furnace Zone 1 FIC-202/222/ 242/262	Mass Flow	In-Line	0-100,000 scfh	932-62,325 scfh	±4% of Full Scale	Inst. Calib. Para. 2.3
5[c]	Fuel Gas to Metal Parts Furnace Zone 2 FIC-289/309/ 329/349	Mass Flow	In-Line	0-3,000 scfh	32-1,810 scfh	±3% of Full Scale	Inst. Calib. Para. 2.3
6[c]	Combustion Air to Metal Parts Furnace Zone 2 FIC-282/302/ 322/342	Mass Flow	In-Line	0-100,000 scfh	932-62,325 scfh	±4% of Full Scale	Inst. Calib. Para. 2.3
7[c]	Fuel Gas to Metal Parts Furnace Zone 3 FIC-369/389	Mass Flow	In-Line	0-1,500 scfh	33-965 scfh	±3% of Full Scale	Inst. Calib. Para. 2.3
8[c]	Combustion Air to Metal Parts Furnace Zone 3 FIC-362/382	Mass Flow	In-Line	0-50,000 scfh	28-31,170 scfh	±4% of Full Scale	Inst. Calib. Para. 2.3
9[b,c,d]	Metal Parts Furnace Zone 1 Temperature TIC-152	Thermocouple	Furnace	0-2,500 F	1,000-1,750 F	±0.375% of Range	Inst. Calib. Para. 2.4

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range	Accuracy	Calibration Method No. and Frequency[a]
10[b,c,d]	Metal Parts Furnace Zone 2 Temperature TIC-141	Thermocouple	Furnace	0-2,500 F	1,000-1,750 F	±0.375% of Range	Inst. Calib. Para. 2.4
11[b,c,d]	Metal Parts Furnace Zone 3 Temperature TIC-153	Thermocouple	Furnace	0-2,500 F	1,000-1,750 F	±0.375% of Range	Inst. Calib. Para. 2.4
12[b,c,d]	Afterburner Temperature TIC-65	Thermocouple	Afterburner	0-3,500 F	1,850-2,150 F	±0.375% of Range	Inst. Calib. Para. 2.4
13[c]	Afterburner Pressure PSSH-390	Diaphragm	Afterburner	0 to -5.0 in. w.c.	-2.5 to -4.5 in. w.c.	±0.25% of Range	Inst. Calib. Para. 2.2
14[c]	Metal Parts Furnace MPF-Furn-101 Pressure PIT-34	Diaphragm	Furnace	0 to -4.0 in. w.c.	-0.5 to -1.0 in. w.c.	0.25% of Range	Inst. Calib. Para. 2.2
15[c]	Metal Parts Furnace MPF-Furn-101 Exhaust Gas CO Analysis AIT-508	Infrared Cell Analyzer	Afterburner Exhaust Line (Extractive)	0-100 & 0-1,000 ppm	0-100 ppm	±1% of Range	Inst. Calib. Para. 1.1 & 1.2
16[c]	Metal Parts Furnace MPF-Furn-101 Exhaust Gas O_2 Analysis AIT-33	Zirconium Oxide Cell Analyzer	Afterburner Exhaust Line (Extractive)	0 to 25%	8.0 to 14%	±2% of Range	Inst. Calib. Para. 1.1 & 1.2
17[b,c,d]	Metal Parts Furnace Afterburner Exhaust Gas CO Analysis AIT-384	Infrared Analyzer	Afterburner Exhaust Line (Extractive)	0-100 to 0-1,000 ppm	0-50 ppm	±1.0% of Scale	Inst. Calib. Para. 1.1 & 1.2
18[b,c,d]	Metal Parts Furnace Afterburner Exhaust Gas O_2 Analysis AIT-82	Zirconium Oxide Cell Analyzer	Afterburner Exhaust Line (Extractive)	0 to 25%	6-12%	±2.0% of Range	Inst. Calib. Para. 1.1 & 1.2
19[c]	Quench Tower PAS-TOWR-102 Gas Exhaust Temperature TSHH-223	Filled System	In-Line	95-300 F	140-200 F	±1% of Setpoint	Inst. Calib. Para. 2.4
20[c]	Quench Brine to Quench Tower PAS-TOWR-102 FIC-217	Electro-magnetic Flowmeter	In-Line	70-600 gpm	115-180 gpm	±0.5% of Rate	Inst. Calib. Para. 2.3

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range	Accuracy	Calibration Method No. and Frequency[a]
21[c]	Quench Brine to Venturi Scrubber PAS-SEPA-B1 FIC-218	Electro-magnetic Flowmeter	In-Line	100-900 gpm	155-240 gpm	±0.5% of Rate	Inst. Calib. Para. 2.3
22[b,c,d]	Clean Liquor to Scrubber Tower Sprays FIC-248	Electro-magnetic Flowmeter	In-Line	450-3,500 gpm	600-1,500 gpm	±0.5% of Rate	Inst. Calib. Para. 2.3
23[c]	Quench Tower PAS-TOWR-102 Level LI-242	D/P Cell	Vessel	0-36 in. w.c.	6 in. from bottom tangent line to 42 in. from bottom tangent line	±0.25% of Span	Inst. Calib. Para. 2.2
24[d]	Scrubber Tower PAS-SCRB-101 Tray Level LIC-243	D/P Cell	Vessel	0-48 in. w.c.	6 in. above tray to 54 in. above tray	±0.25% of Span	Inst. Calib. Para. 2.2
25[c]	Scrubber Tower Bottom Level LIC-245	D/P Cell	Vessel	0-60 in. w.c.	24 in. above bottom tangent line to 84 in. above bottom tangent line	±0.25% of Span	Inst. Calib. Para. 2.2
26[c]	Demister Vessel PAS-DMIS-103 Bottom Level LIC-293	D/P Cell	Vessel	0-12 in. w.c.	8 in. above vessel bottom to 20 in. above vessel bottom	±0.25% of Span	Inst. Calib. Para. 2.2
27[b,c,d]	Venturi Scrubber Diff Pressure PDIC-222	D/P Cell	Venturi Scrubber	0-60 in. w.c.	20-40 in. w.c.	±0.25% of Span	Inst. Calib. Para. 2.2
28[c]	Brine from Scrubber Tower PAS-SCRB-101 Density DIC-216	Magnetically Vibrated Tube	Pump PAS-Pump-102/103 Disch to Suction	30-150 lb/ft^3	62-80 lb/ft^3	±0.25% of Span	Inst. Calib. Para. 2.5
29[c]	Brine pH from Scrubber Tower PAS-SCRB-101 pH AIC-224 A/B	Electrodes	Pump PAS-Pump-102/103 Disch To Suction	0-14 pH units	5-10 pH units	±0.01 pH Unit	Inst. Calib. Para. 2.5
30[c]	Clean Liquor pH AIC-247	Electrodes	Pump PAS-Pump-104/105 Disch to Suction	0-14 pH units	6-10 pH units	±0.01 pH Unit	Inst. Calib. Para. 2.5
31[c]	Brine Density DIC-249	Magnetically Vibrated Tube	Pump PAS-Pump-104/105 Disch To Suction	30-150 lb/ft^3	62-80 lb/ft^3	±0.25% of Span	Inst. Calib. Para. 2.5

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range	Accuracy	Calibration Method No. and Frequency[a]
32[c]	Demister Water pH AI-668	Electrodes		0-14 pH units	1-14 pH units	±0.01 pH Unit	Inst. Calib. Para. 2.5
33[c]	Demister PAS-DMIS-103 Demis Element Diff Press PDI-291	D/P Cell	Vessel	0-10 in. w.c.	3-10 in. w.c.	±0.25% of Span	Inst. Calib. Para. 2.2
34[c]	Blower PAS-BLOW-102 Exhaust Gas CO AI-669	Infrared Cell Analyzer	Blower Exhaust Line (Extractive)	0-100 & 0-1,000 ppm	0-50 ppm	±1% of Range	Inst. Calib. Para. 1.1 & 1.2
35[c]	Blower PAS-BLOW-102 Exhaust Gas O_2 AI-670	Zirconium Oxide Cell Analyzer	Blower Exhaust Line (In-Situ)	0-25%	6-12%	±2% of Range	Inst. Calib. Para. 1.1 & 1.2
36[b,c,d]	Blower PAS-BLOW-102 Exhaust Gas MON ACAM-167	Gas Chromatograph	Blower Exhaust Line (Extractive)	Att. D-2	Att. D-2	1% Repeat-ability	Att. D-2
37[c]	Stack PAS-STAK-102 Exhaust Gas Agent MON ACAM-129	Gas Chromatograph	Stack (Extractive)	Att. D-2	Att. D-2	1% Repeat-ability	Att. D-2
38[b,c,d]	Metal Parts Furnace Afterburner Exhaust Gas Flow Rate PDIT-786	D/P Cell	Afterburner Exhaust	0-1.0 in. w.c.	0-0.4 in. w.c.	±2% of range	Inst. Calib. Para. 2.2
39[c]	Clean Liquor to Scrubber Tower Pressure PIT-258	D/P Cell	In-Line	0-36 in. w.c.	6 in. from bottom tangent line to 42 in. from bottom tangent line	±0.25% of range	Inst. Calib. Para. 2.2
40[c]	Brine Surge Tanks 101, 102, 201,202 Level LIT-03/07/703/707	Orifice & D/P Cell	Brine Surge Tanks	0-20 ft.	0-18 ft. 0-12 psig	±25% of Span	Inst. Calib. Para. 2.2
41[b,d]	Natural Gas Pressure PIT-159	Diaphragm	Natural Gas Line	0-50 psig	10-20 in. w.c.	±0.25% of Range	Inst. Calib. Para. 2.2

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range	Accuracy	Calibration Method No. and Frequency[a]
42	Combustion Air Pressure PIC-118	Diaphragm	In-Line	0-50 in. w.c.	N/A	±0.25% of Range	Inst. Calib. Para. 2.2
43	Presence of Flame Burnout Chamber BA-883-892	Flame Detector	Burner	N/A	N/A	N/A	N/A
44	Presence of Flame Afterburner BA-893, 894	Flame Detector	Burner	N/A		N/A	N/A

NOTES:

[a] See Attachment D-1 of the Application, "Process Instrumentation Calibration," "Oxygen and Carbon Monoxide Analyzer Calibration Procedures," and "QA/QC Data Forms." See also Operating and QA/QC procedures in "Laboratory Quality Assurance Program for the Chemical Stockpile Disposal Program, November 1988" and Attachment D-1, "Stack Gas Sample Conditioning System." Additional operating and QA/QC procedures for Automatic Continuous Air Monitoring System (Item No. "36" above) are in Attachments D-2 and F-1 of the Application.

[b] Continuous monitoring.

[c] Continuous recording.

[d] Maintenance, at a minimum, in accordance with equipment manufacturer's recommendations.

N/A = not applicable.

TABLE 7-4 METAL PARTS FURNACE WASTE-FEED CUTOFF PARAMETERS

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
MPF-01	TIC-152A	MPF temperature zone 1 high-high	* 1,800 °F for projectiles, 1,600°F ton containers
MPF-02	TIC-141A	MPF temperature zone 2 high-high	* 1,800 °F for projectiles, 1,600°F ton containers
MPF-03	TIC-153A	MPF temperature zone 3 high-high	* 1,800 °F for projectiles, 1,600°F ton containers
MPF-04	PAL-159	Natural gas to MPF pressure low	* 4 psig
MPF-05	TAHH-87	MPF afterburner temperature high-high	* 2,200 °F
MPF-06	TALL-87	MPF afterburner temperature low-low	* 1,800 °F
MPF-07	TAHH-223	Quench tower exhaust gas temperature high-high	* 250 °F
MPF-08	LAHH-244	Scrubber tower sump liquid level high-high	84 in.above bottom tangent line
MPF-09	LALL-246	Scrubber tower sump liquid level low-low	24 in.above bottom tangent line
MPF-10	TIC-152 TIC-141 TIC-153	MPF temperature low-low	* 1,300 °F for projectiles, 1,000°F ton containers 1,100 °F bulk

* May be modified due to results from trial burns

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
MPF-11	PALL-138	Combustion air pressure low-low	* 20 in. w.c.
MPF-12	PDAHH-786	Afterburner flue gas flow rate high-high	* 1.5 in. w.c.
MPF-13	AAH-384	Afterburner exhaust CO concentration high	100 ppm corrected to 7%O_2, dry basis based on 1-hr. rolling average
MPF-14	PDIT-222	Venturi scrubber pressure drop low-low	* 18 in. w.c.
MPF-15	FIT-248	Clean liquor to scrubber tower flow rate low-low	* 600 gpm

* May be modified due to results from trial burns

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
MPF-16	AIT-167	Chemical agent emission high-high based on instantaneous measurements	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX
MPF-18	LSHH-02/06/702/706	Brine surge tanks 101,102, 201,202. Both levels high-high	18 feet 3-inch level
MPF-19	PAH-70	Burnout chamber pressure high	-0.5 in. w.c.
MPF-20	AIT-247	Clean liquor to scrubber tower pH low	* 7.5
MPF-21	PAL-258	Clean liquor to scrubber tower pressure low	* 15 psig
MPF-22	FAL-218	Quench brine to venturi scrubber flow rate low-low	* 90 gpm
MPF-23	DAH-249	Brine density high	* 80 lb/ft^3
MPF-24	PDAR	Munitions feed rate high	* M121A1 (GB) 181 mun/hr M121A1 (VX) 157 mun/hr M426 (GB) 97 mun/hr M426 (VX) 81 mun/hr M23 Mine Drum (VX) empty 24 mun/hr MK-94 Bomb (GB) 7.3 mun/hr MC-1 Bomb (GB) 7.3 mun/hr Ton container (HD) 1.72 mun/hr Spray Tank TMU-28 (VX) 1 mun/hr Miscellaneous Metal and Ash 13,000lb/hr Surrogates 6607 lbs/hr

* May be modified due to results from trial burns

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
MPF-25	AIT-82	Oxygen content in afterburner exhaust gas high	* 12% corrected to a dry basis
MPF-26	AIT-82	Oxygen content in afterburner exhaust gas low	* 7.3% corrected to a dry basis
MPF-27	PSHH-390	Afterburner pressure high-high	-0.5 in.w.c.
MPF-28	(10) BA 883-892	Flame loss in burnout chamber	MPF zone 1 all burners out or 2 burners out and zone temperature less than 1400F . MPF zone 2 all burners out or 2 burners out and zone temperature less than 1400F. MPF zone 3 all burners out or 2 burners out and zone temperature less than 1400F.
MPF-29	(2) BA 893/894	Flame loss in afterburner	Flame loss

* 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	Instrument Range	Expected Range or Setpoint	Accuracy	Calibration Method No and Frequency[a]
1[c]	Fuel Gas to Rotary Retort DFS-Furnace 101 FIC-243	Mass Flow	In-Line	0-4,000 scfh	1,953-2,841 scfh	± 0.25% of range	Inst.Calib. Para. 2.3
2[c]	Fuel Gas to Afterburner DFS-Furnace 102 FIC-66, 191	Mass Flow	In-Line	0-12,000 scfh	3,445-8,560 scfh	± 0.25% of range	Inst. Calib. Para. 2.3
3[c]	Combustion Air to Rotary Retort DFS-Furnace 101 FFIC-21	Mass Flow	In-Line	0-220,000 scfh	54,255-149,875 scfh	± 0.25% of range	Inst. Calib. Para. 2.3
4[c]	Combustion Air to Afterburner DFS-Furnace 102 FFIC-78, 79	Mass Flow	In-Line	0-340,000 scfh	95,680-237,740 scfh	± 0.25% of range	Inst. Calib. Para. 2.3
5[b,c,d]	Rotary Retort DFS-Furnace 101 Pressure PIC-18	Diaphragm	Furnace	-5.0 to 1.0 in. w.c.	-0.5 to -2.0 in. w.c.	± 0.2% of span	Inst. Calib. Para. 2.2
6[c]	Rotary Retort DFS-Furnace 101 Temperature TIC-20	Thermocouple	Furnace	0-2,500 F	1,000-1,800 F	± 0.375% of range	Inst. Calib. Para. 2.4
7[c]	Discharge Conveyor Temperature TIC-42, 184	Thermocouple	Conveyor	0-1,600 F	1,000 F	± 0.375% of range	Inst. Calib. Para. 2.4
8[c]	Flue Gas from DFS-Furnace 101 Temperature TIC-8	Thermocouple	In-Line	0-2,500 F	1,000-1,800 F	± 0.375% of range	Inst. Calib. Para. 2.4
9[b,c,d]	Exhaust Gas from Afterburner DFS-Furnace 102 Temperature TIC-92	Thermocouple	In-Line	0-3,500 F	1,850-2,350 F	± 0.375% of range	Inst. Calib. Para. 1.1 & 1.2
10[b,c,d]	Quench Brine to Holding Tank Density DIC-33	Magnetically Vibrated Tube	In-Line	30-120 lb/ft^3	62.4-71.8 lb/ft^3	± 0.25% of range	Inst. Calib. Para. 1.1 & 1.2

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range or Setpoint	Accuracy	Calibration Method No and Frequency[a]
11[b,c,d]	Quench Brine to Holding Tank pH AIC-7	Electrodes	Pump PAS-Pump 106/107 Discharge to Suction	0-14 pH units	5-10 pH units	± 0.01 pH unit	Inst. Calib. Para. 2.5
12[b,c,d]	Clean Liquor Density DIC-35	Magnetically Vibrated Tube	Pump PAS-Pump 108/109 Discharge to Suction	50-90 lb/ft^3	62.4-71.8 lb/ft^3	± 0.25% of range	Inst. Calib. Para. 2.5
13[b,c,d]	Clean Liquor pH AIC-34	Electrodes	Clean Liquor Feed Line	0-14 pH units	6-10 pH units	0.01 pH unit	Inst. Calib. Para. 2.5
14[c]	Process Water & Brine to Quench Tower PAS-Tower-103 FIC-02	Electromagnetic Flowmeter	In-Line	0-400 gpm	255 gpm	0.5% of range	Inst. Calib. Para. 2.3
15[b,c,d]	Quench Brine to Venturi Scrubber PAS-SEPA-102 FIC-06	Electromagnetic Flowmeter	In-Line	0-350 gpm	79-198 gpm	0.5% of range	Inst. Calib. Para. 2.3
16[c]	Clean Liquor Return to Scrubber Tower PAS SCRUB-102 FIC-30	Electromagnetic Flowmeter	In-Line	0-3,500 gpm	2,141 gpm	0.5% of range	Inst. Calib. Para. 2.3
17[c]	Quench Tower PAS-Tower 103 Level LI-09	Transmitter	Vessel	0-36 in. w.c.	6-42 in.above tangent line	0.2% of span	Inst. Calib. Para. 2.3
18	Scrubber Tower PAS-SCRB-102 Bottom Level LIC-10	Transmitter	Vessel	0-60 in. w.c.	24-84 in.above tangent line	0.2% of span	Inst. Calib. Para. 2.3
19	Scrubber Tower Tray Level LIC-31	Transmitter	Vessel	0-48 in. w.c.	6-54 in. above tangent line	0.2% of span	Inst. Calib. Para. 2.3
20	Demist PAS-DMIS-104 Bottom Level LI-314	Transmitter	Vessel	0-12 in. w.c.	8-20 in. above vessel bottom	0.2% of span	Inst. Calib. Para. 2.3
21	Venturi Scrubber PAS-SEPA-102 Diff. Pressure PDIC-08	Transmitter	Venturi Scrubber	0-60 in. w.c.	20-40 in. w.c.	0.2% of span	Inst. Calib. Para. 2.3

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range or Setpoint	Accuracy	Calibration Method No and Frequency[a]
22	Feed Rate to Rotary Retort	PDAR	Control Room	--	38-2,338 lb/hr	--	--
23[c]	Quench Tower Exhaust Gas Temp HH TI-374	Filled System	In-line	95-300 F	140-300 F	± 1.0% setpoint	Inst. Calib. Para. 2.4
24[c]	Afterburner Exhaust Gas Flow Rate PDIT-813	Orifice & D/P Cell	In-line	0-1.0 in. w.c.	0-0.5 in. w.c.	± 0.5%of span	Inst. Calib. Para. 2.3
25[b,c,d]	Afterburner Exhaust Gas O_2 Analyzer AIT-175	Zirconium Oxide Cell Analyzer	In-line (Extractive)	0-25%	6.0 to 20.8%	± 2% of range	Inst. Calib. Para. 1.1 & 1.2
26[b,c,d]	Afterburner Exhaust Gas CO Analyzer AIT-59	Infrared Cell Analyzer	In-line (Extractive)	0-100 & 0-1,000 ppm	0-50 ppm	± 1% of range	Inst. Calib. Para. 1.1 & 1.2
27[c]	Rotary Retort Exhaust Gas O_2 Analyzer AIT-09	Zirconium Oxide Cell Analyzer	In-line (Extractive)	0-25%	6.0 to 20.8%	± 2% of range	Inst. Calib. Para. 1.1 & 1.2
28[c,d]	Brine Surge Tanks 101, 102 201,202 Level LIT-03/07/703/ 707	Orifice & D/P Cell	Brine Surge Tanks	0-20 ft.	0-18 ft.	25% of span	Inst. Calib. Para. 2.3
29[b,c]	Exhaust Blower Gas Agent Mon ACAM-183	Gas Chromatograph	Blower Exhaust Line (In-Situ)	See Attach. D-2	Att. D-2	1% reliability	Att. D-2
30	Clean Liquor to Scrubber Tower Pressure Low-Low PIT-36	D/P Cell	In-Line	0-25 psig	10-20 psig	± 1% of span	Inst. Calib. Para. 2.3
31	Rotational Speed ST-98	Transmitter	Retort Drive Motor	0-4 rpm	1-2 rpm	± 1% of range	--
32	Presence of Flame Rotary Retort BA-844	Flame Detector	Burner	N/A	N/A	N/A	N/A

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range or Setpoint	Accuracy	Calibration Method No and Frequency[a]
33	Presence of Flame Afterburner BA-850/851	Flame Detector	Burner	N/A	N/A	N/A	N/A
34	Rotary Retort Shell Temperature TE51-A-E	Photometric	Shroud	800-1600 F	1000-1600 F	±0.5% of span	Inst. Calib. Para. 4
35	Feed Chute Jam Switches XS-207, XS-209	Position Chutes	Feed	N/A	N/A	N/A	N/A
36	Afterburber Pressure PIT-65	D/P Cell	Afterburner	0-1.5 in. w.c.	0.25-1.0 in. w.c.	±0.2% of span	Inst. Calib. Para. 3.1
37	Heated Discharge Conveyor Operation XS-58, XS-821	Position Switches	Heated Conveyor	N/A Discharge	N/A	N/A	N/A

NOTES:

[a] See Attachment D-1 of the Application, "Process Instrument Calibration," "Oxygen and Carbon Monoxide Analyzer Calibration Procedures," and "QA/QC Data Forms". See also Operating and Quality Assurance/Quality Control (QA/QC) procedures in "Laboratory Quality Assurance Program for the Chemical Stockpile Disposal Program, November 1988" and Attachment D-1 of the Application, "Stack Gas Sample Conditioning System." Additional operating and QA/QC procedures for ACAMS (Item No. "29" above) are in Attachments D-2 and F-1 of the Application.

[b] Continuous monitoring

[c] Continuous recording

[d] Maintenance at a minimum, in accordance with equipment manufacturer's recommendations.

TABLE 7-6 DEACTIVATION FURNACE SYSTEM WASTE-FEED CUTOFF PARAMETERS

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
DFS-01	TAHH-182	Rotary retort temperature high-high (flue gas temperature before spray)	* 1950 °F
DFS-02	TAHH-08	Flue gas temperature after spray high-high	* 1600 °F
DFS-03	TAL-08	Flue gas temperature after spray low-low	* 750 °F
DFS-04	XS-207 XS-209	Jammed chute	Feed chute filled
DFS-05	PAHH-204	Pressure in rotary retort combustion chamber high-high	-0.05 inch w.c.
DFS-06	TAHH-51A, 51B, 51C, 51D, 51E	Temperature on rotary retort shell high-high	* 1600 °F
DFS-07	BA-850/851	Afterburner flame loss	Flame loss
DFS-08	TALL-42	Heated discharge conveyor temperature low-low	* 1000 °F
DFS-09	XS-58 XS-821	Jam in discharge conveyor	Discharge chute filled
DFS-10	SAL-57	No motion on heated discharge conveyor	No motion
DFS-11	PDAH-813	Afterburner exhaust flow rate high	* 1.0 in. w.c.
DFS-12	TALL-182	Rotary Retort Temperature low-low (flue gas temperature before spray)	* 1000 °F except during start-up feed is allowed at 900 °F up to 5 min. to achieve 1,000 °F

* May be modified due to results from trial burns

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
DFS-13	TAL-197	Afterburner temperature low-low	* 1,950°F for rockets 1,750°F for other munitions
DFS-14	TAHH-197	Afterburner temperature high-high	* 1,950°F for rockets 1,750°F for other munitions
DFS-15	PDAL-08	Venturi scrubber pressure low-low	* 18 in. w.c.
DFS-16	AAH-59	CO level in flue gas high	100 ppm corrected to 7%O_2, dry basis based on 1-hr. rolling average
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 (GB) 40 mun/hr M55 (VX) 40 mun/hr
DFS-18	FAL-30	Clean liquor to scrubber tower flow rate low-low	* 540 gpm
DFS-19	AIT-183	Chemical agent emission high-high based on instantaneous measurements	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX
DFS-21	LSHH-02/06	Brine surge tanks 101,102, 201,202. Both levels high-high	18 feet 3-inch level

* May be modified due to results from trial burns

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
DFS-22	AAL-34	Clean liquor to scrubber tower pH low	* 7.5
DFS-23	PAL-36	Clean liquor to scrubber tower pressure low-low	* 15 psig
DFS-24	TSHHH-375	Quench tower exhaust gas temperature high-high-high	* 250 °F
DFS-25	FAL-06	Quench brine to venturi scrubber flow rate low-low	* 170 gpm
DFS-26	DAH-35	Brine density high	* 90 lb/ft^3
DFS-27	ST-98	Rotational speed	Shall not exceed 2 rpm
DFS-28	AIT-175	Oxygen in afterburner exhaust gas high	* 13% corrected to a dry basis
DFS-29	AIT-175	Oxygen in afterburner exhaust gas low	* 8.8% corrected to a dry basis
DFS-30	PAH-65	Afterburner pressure high	-0.05 inch w.c.
DFS-31	LAHH-32	Scrubber tower sump evel high-high	84 inches above bottom tangent line
DFS-32	LALL-24	Scrubber tower sump level low-low	24 inches above bottom tangent line
DFS-33	BA-844	Flame loss in rotary retort	Flame loss

* May be modified due to results from trial burns

TABLE 7-7 DUNNAGE INCINERATOR INSTRUMENT AND PROCESS DATA

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range	Accuracy	Calibration Method No. and Frequency[a]
1[c]	Fuel Gas to Dunnage-Afterburner DUN-Furnace 102 Burner No. 1 & 2 FIC-198,385	Mass Flow	In-Line	0-500 scfh	269-301 scfh	± 1% of Span	Inst. Calib. Para. 2.3
2[c]	Fuel Gas to Dunnage Afterburner DUN-Furnace 102 Aux. Burner No. 1,2 FIC-387	Mass Flow	In-Line	0-500 scfh	269-301 scfh	± 1% of Span	Inst. Calib. Para. 2.3
3[c]	Combustion Air to Dunnage Afterburner 102 Burner No. 1 & 2 FFIC 182,383	Mass Flow	In-Line	0-20,000 scfh	8,000-11,510 scfh	± 1% of Span	Inst. Calib. Para. 2.3
4[b,c,d]	Dunnage Afterburner DUN-Furnace 102 Temperature TIC-38	Thermocouple	Furnace	0-3,500°F	1,850-2,150°F	± 0.375% of Range	Inst. Calib. Para. 2.4
5[b,c,d]	Exhaust Gas from Dunnage Afterburner DUN-Furnace 102 O_2 AI-253	Zirconium Oxide Cell Analyzer	Exhaust Gas Line (extractive)	0-25%	10-15%	± 2% of Range	Inst. Calib. Para. 1.1 & 1.2
6[b,c,d]	Exhaust Gas from Dunnage Afterburner DUN-Furnace 102 CO AI-254	Infrared Cell Analyzer	Exhaust Gas Line (extractive)	0-100 ppm	0-50 ppm	± 1% of Range	Inst. Calib. Para. 1.1 & 1.2
7[c]	Dunnage Primary Furnace DUN-Furnace 101 Overfire Air FIC-357	Orifice Plate & D/P	In-Line	0-50,000 scfh	25,960-29,828 scfh	± 3% of Full Scale	Inst. Calib. Para. 2.3

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range	Accuracy	Calibration Method No. and Frequency[a]
8[c]	Fuel Gas to Dunnage Primary Furnace DUN-Furnace Burners FIC-118, 138, 158, 178	Mass Flow Meter	In-Line	0-500 scfh	14-300 scfh	± 1% of Span	Inst. Calib. Para. 2.3
9[c]	Combustion Air to Dunnage Primary Furnace DUN-Furnace 101 Burners FFIC-102, 122, 142, 162	Mass Flow Meter	In-Line	0-75,000 scfh	35,205-47,720 scfh	± 1% of Span	Inst. Calib. Para. 2.3
10[b,c,d]	Dunnage Primary Furnace DUN-Furnace 101 Temperature TIC-42	Thermocouple	Furnace	0-2,500°F	1,500-1,800°F	± 0.375% of Range	Inst. Calib. Para. 2.4
11[c]	Dunnage Primary Furnace DUN-Furnace 101 Pressure PIC-39	Diaphragm	Furnace	-5 to 0 in. w.c.	-0.5 to -3.5 in. w.c.	± 0.25% of Span	Inst. Calib. Para. 2.2
12[b,c,d]	Quench Tower PAS-Tower 101 Exhaust Gas Temperature TIC-165	Thermocouple	In-Line	0-600°F	250-400°F	0.375% of Range	Inst. Calib. Para. 2.4
13[c]	Quench Tower PAS Tower 101 Exhaust Gas Hi-Hi Temperature TSHH-419	Filled System	In-Line	250-600°F	250-400°F	± 1% of Setpoint	Inst. Calib. Para. 2.4
14[c]	Quench Tower PAS-Tower 101 Exhaust Gas HCl AI-270	Infrared Cell Analyzer	In-Line (extractive)	0-200 ppm	0-130 ppm	± 1% of Range	Inst. Calib. Para. 1.1 & 1.2

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range	Accuracy	Calibration Method No. and Frequency[a]
15[b,c,d]	DUN-Furnace PAS-BLOW-101 Exhaust Gas CO AI-208	Infrared Cell Analyzer	Stack (extractive)	0-100 ppm	0-50 ppm	± 1% of Range	Inst. Calib. Para. 1.1 & 1.2
16[c]	DUN-Furnace PAS-BLOW-101 Exhaust Gas O_2 AI-209	Zirconium Oxide Cell Analyzer	Stack (in Situ)	0-25%	8-10%	± 2% of Range	Inst. Calib. Para. 1.1 & 1.2
17[b,c,d]	DUN-Furnace Stack PAS-STAK-101 Exhaust Gas Chemical Agent MON ACAM-130	Gas Chromatograph	Stack (extractive)	Attachment D-2 of the Application	Attachment D-2 of the Application	± 1% Repeat-ability	Att. D-2
18[c]	Dunnage Feed Rate Monitor PDAR	Hopper Load Cell Ram (or equivalent weighing device with Ram Counter)	Feed to Furnace	0-2,000 lb	**50-150 lb**	± 1% of Range	--
19[b,c,d]	Dunnage Afterburner Exhaust Gas Flow Rate PDIT-390	Orifice & D/P Cell	In-Line	0-1 in. w.c.	0.5 in.	± 5% of Span	Inst. Calib. Para. 2.3
20	Baghouse Differentia l Pressure PDIT-166	Transmitter	Baghouse	0-20 in. w.c.	5-10 in. w.c.	±1% of Span	Inst. Calib. Para. 2.3
21	Dunnage Afterburner Pressure DUN-Furnace 102 PIT-201	Diaphragm	Afterburner	0 - -5 in. w.c.	-2.5 - -4.5 in w.c.	±0.25% of Range	Inst. Calib. Para. 2.3
22	Natural Gas Pressure DUN-Furnace 101 PIT-354	Diaphragm	Natural Gas Supply Line	0-2 psig	0.5-0.8 psig	±0.25% of Span	Inst. Calib. Para. 2.2
23	Presence of Flame Primary Chamber BE-120, 140, 160, 180	Flame Detector	Burner	N/A	N/A	N/A	N/A

Item No.	Control Parameter	Measuring Device	Location	Instrument Range	Expected Range	Accuracy	Calibration Method No. and Frequency[a]
24	Pressure of Flame Afterburner BE-401, 402	Flame Detector	Burner	N/A	N/A	N/A	N/A
25	Quench Recirculation Tank Level LSHH-55	Differential Pressure Cell	Recirculation Tank	0-72 in. w.c.	9-50 in. w.c.	±0.25% of span	Inst. Calib. Para. 3.1

NOTES:

[a] See Attachment D-1 of the Application for, "Process Instrument Calibration," "Oxygen and Carbon Monoxide Analyzer Calibration Procedures," and "QA/QC Data Forms". Operating and QA/QC procedures in "Laboratory Quality Assurance Program for the Chemical Stockpile Disposal Program, November 1988" and Attachment D-1 of the Application, "Stack Gas Sample Conditioning System." Additional operating and QA/QC procedures for ACAMS (Item No. "18" above) are in Attachments D-2 and F-1 of the Application.

[b] Continuous monitoring

[c] Continuous recording

[d] Maintenance at a minimum, in accordance with the equipment manufacturer's recommendations

TABLE 7-8 DUNNAGE INCINERATOR WASTE FEED CUTOFF PARAMETERS

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operation
DUN-01	TAHH-42B	Primary chamber temperature high-high	* 2,050 °F
DUN-02	TALL-42B	Primary chamber temperature low-low	* 1,250 °F
DUN-03	BA-420/ 421/422/ 423	Primary chamber flame loss	Flame loss
DUN-04	TALL-56	Afterburner temperature low-low	* 1,750 °F
DUN-05	PAHH-202	Afterburner pressure high-high	-1.0 inch w.c.
DUN-06	BA-429/ 430	Afterburner flame loss	Flame loss
DUN-07	TAH-38B	Afterburner temperature high-high	* 2,250 °F
DUN-08	PdAHH-390	Afterburner flue gas flow rate high	* 0.6 in. w.c.
DUN-09	AAH-254	CO level in flue gas high	100 ppm corrected to 7%O_2, dry basis based on 1-hr. rolling average
DUN-10	ACAM-130	Chemical agent emission high-high based on instantaneous measurements	0.0003 mg/m^3 GB 0.03 mg/m^3 HD 0.0003 mg/m^3 VX

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operation
DUN-12	TSHH-419	Quench tower exhaust gas temperature high-high[9]	* 400°F

[9] When the quench tower exhaust gas temperature exceeds high high temperature, the exhaust gas will flow directly to the carbon PAS bypassing the baghouse.

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operation
DUN-13	PAH-39	Primary chamber pressure high-high	* -0.5 in. w.c.
DUN-14	PDAH-166	Baghouse differential pressure high	10 inches w.c.
DUN-15	PDI-166	Baghouse differential pressure low	1 inch w.c. *
DUN-16	PDAR	Feed rates	* 368 lb/hr total 92 lbs/ 15 min. Surrogate 324 lb/hr total 81 lbs/ 15 min
DUN-17	AIT-270	HCl in exhaust gas	112.8 ppm
DUN-18	AIT-253	Oxygen content in afterburner exhaust gas high	*14% corrected to a dry basis
DUN-19	AIT-253	Oxygen content in afterburner exhaust gas low	*8.5% corrected to a dry basis
DUN-20	LAH-55	Quench recirculation tank level high	2 feet 5 inches
DUN-21	02-112-PDAH-648A/B	Prefilter differential pressure high	10 in. w.c.
DUN-22	02-112-PDAH-648A/B	HEPA filter differential pressure high	10 in. w.c.

TABLE 7-9 MAXIMUM ALLOWABLE EMISSION RATES FOR THE INCINERATORS

Allowable Emission Rates					
		Emission Rates (g/sec)			
Constituent	CAS No.	LIC	DFS	MPF	DUN
AGENTS					
GB	107-44-8	As measured at the common stack, the combined LIC, DFS, and MPF emission rate must not exceed 4.29E-06.			1.35E-07
VX	50782-69-9	As measured at the common stack, the combined LIC, DFS, and MPF emission rate must not exceed 4.29E-06.			1.35E-07
HD (Mustard)	505-60-2	As measured at the common stack, the combined LIC, DFS, and MPF emission rate must not exceed 4.29E-04.			1.35E-05
ORGANICS					
TEQ 2,3,7,8-PCDF's [Dioxin & Furan congeners]		*	*	*	*
Total Polychlorinated Biphenyls [PCB cong]	1336-36-3	*	*	*	*
1,1,2,2-Tetrachloroethane	79-34-5	*	*	*	*
1,1-Dichloroethane	75-34-3	*	*	*	*
2,4,6-Trinitrotoluene	118-96-7	*	*	*	*
2,4-Dinitrotoluene	121-14-2	*	*	*	*

Allowable Emission Rates					
		Emission Rates (g/sec)			
Constituent	CAS No.	LIC	DFS	MPF	DUN
2,6-Dinitrotoluene	606-20-2	*	*	*	*
2-Hexanone	591-78-6	*	*	*	*
Acetone	67-64-1	*	*	*	*
Benzene	71-43-2	*	*	*	*
Benzoic Acid	65-85-0	*	*	*	*
Benzyl Alcohol	100-51-6	*	*	*	*
Bis(2-ethylhexyl)phthalate	117-81-7	*	*	*	*
Bromodichloromethane		*	*	*	*
Bromoform	75-22-2	*	*	*	*
Carbon disulfide		*	*	*	*
Carbon Tetrachloride	56-23-5	*	*	*	*
Chlorobenzene	106-90-7	*	*	*	*
Chloroform	67-66-3	*	*	*	*
Chloromethane	74-87-3	*	*	*	*
m-Cresol	108-39-4	*	*	*	*
o-Cresol	95-48-7	*	*	*	*
p-Cresol	106-44-5	*	*	*	*
Di(n)octyl phthlate	117-84-0	*	*	*	*
Di-n-butyl Phthalate	84-74-2	*	*	*	*
Dibromochloromethane	124-48-1	*	*	*	*
(cis)1,3-Dichloropropene	542-75-6	*	*	*	*
(trans)1,3-Dichloropropene	542-75-6	*	*	*	*
Diethyl Phthalate	84-66-2	*	*	*	*
Dimethyl Phthalate	131-11-3	*	*	*	*
Ethylbenzene	100-41-4	*	*	*	*
HMX	2691-41-0	*	*	*	*
Methyl chloroform	71-55-6	*	*	*	*

Allowable Emission Rates

		Emission Rates (g/sec)			
Constituent	CAS No.	LIC	DFS	MPF	DUN
Methyl ethyl ketone	78-93-3	*	*	*	*
Methyl isobutyl ketone		*	*	*	*
Methylene chloride	75-09-2	*	*	*	*
Naphthalene	91-20-3	*	*	*	*
Nitroglycerine	55-63-0	*	*	*	*
Propylene dichloride	78-87-5	*	*	*	*
RDX	121-82-4	*	*	*	*
Styrene	100-42-5	*	*	*	*
Tetrachloroethylene	127-18-4	*	*	*	*
Toluene	106-88-3	*	*	*	*
Vinyl acetate	108-05-4	*	*	*	*
Vinyl chloride	75-01-4	*	*	*	*
Total xylene	1330-20-7	*	*	*	*
METALS					
Antimony	7440-36-0	*	*	*	*
Arsenic	7440-38-2	*	*	*	*
Barium	7440-39-3	*	*	*	*
Beryllium	7440-41-7	*	*	*	*
Boron	7440-42-8	*	*	*	*
Cadmium	7440-43-9	*	*	*	*
Chromium	7440-47-3	*	*	*	*
Cobalt	7440-48-4	*	*	*	*
Copper	7440-50-8	*	*	*	*
Lead	7439-2-1	*	*	*	*
Manganese	7439-96-5	*	*	*	*
Mercury	7440-97-6	*	*	*	*
Nickel	7440-02-0	*	*	*	*
Phosphorous	7440-14-0	*	*	*	*
Selenium	7782-49-2	*	*	*	*

Allowable Emission Rates

		Emission Rates (g/sec)			
Constituent	CAS No.	LIC	DFS	MPF	DUN
Silver	7440-22-4	*	*	*	*
Tin	7440-31-5	*	*	*	*
Thallium	7440-28-0	*	*	*	*
Vanadium	7440-62-2	*	*	*	*
Zinc	7440-66-6	*	*	*	*
ACID GASSES					
Hydrogen Chloride		3.81E-02	1.16E-03	8.16E-03	5.04E-01
Hydrogen Fluoride		*	*	*	*
OTHER CONSTITUENTS					
Chlorine		*	*	*	*
Particulates		*	*	*	*

* To be determined by the results of the Trial Burns. (See Module VI).

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 340-100-002, 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 Army Depot 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 will be satisfied by the FFA, except for:

i. Any newly identified SWMU's that were not identified in the final CERCLA Record of Decisions for the Umatilla Depot.;

ii. Those SMWU's that are discovered after the termination of the FFA, which Oregon determines to be subject to permit condition VIII.A.3.

VIII.A.3 NOTIFICATION OF NEWLY IDENTIFIED SWMU'S TO DEPARTMENT

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.

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 (supply any available 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.

ATTACHMENT 1

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 12-31-91
GSA No. 0246-EPA-GT

For EPA Regional Use Only

Date Received
Month Day Year

EPA
United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application
Part A

(Read the instructions before starting)

For State Use Only

I. ID Number(s)

A. EPA ID Number	B. Secondary ID Number (if applicable)
O R 6 2 1 3 8 2 0 9 1 7	

II. Name of Facility

U M A T I L L A D E P O T A C T I V - C D F *

III. Facility Location (Physical address not P.O. Box or Route Number)

A. Street

I N T E R S T A T E H W Y - 8 4 A T E X I T 1 7 7

Street (continued)

City or Town	State	ZIP Code
H E R M I S T O N	O R	9 7 8 3 8 - 9 5 4 4

County Code (if known)	County Name
	U M A T I L L A / M O R R O W

B. Land Type (enter code)	C. Geographic Location LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)	D. Facility Existence Date Month Day Year
F	4 5 5 0 3 0 N	1 1 9 2 6 0 0 W	1 0 1 4 1 9 4 1

IV. Facility Mailing Address

Street or P.O. Box

U M A T I L L A A R M Y D E P O T A C T I V I T Y

City or Town	State	ZIP Code
H E R M I S T O N	O R	9 7 8 3 8 - 9 5 4 4

V. Facility Contact (Person to be contacted regarding waste activities at facility)

Name (last)	(first)
R I T C H I E	P A T R I C K

Job Title	Phone Number (area code and number)
C H I E F - E N V & S A F E T Y	5 0 3 - 5 6 4 - 5 2 9 4

VI. Facility Contact Address (See instructions)

Contact Address Location	Mailing
	X

B. Street or P.O. Box

U. S. A R M Y D E P O T A C T I V I T Y

City or Town	State	ZIP Code

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 12-31-91
GSA No. 0246-EPA-OT

EPA I.D. Number (enter from page 1): OR6213820917

Secondary ID Number (enter from page 1):

VII. Operator Information (see instructions)

Name of Operator: SEE IX

Street or P.O. Box:

City or Town: | State: | ZIP Code:

Phone Number (area code and number): - -

B. Operator Type:

C. Change of Operator Indicator: Yes ☐ No ☐

Date Changed: Month / Day / Year

VIII. Facility Owner (see instructions)

A. Name of Facility's Legal Owner: U.S. DEPT. OF ARMY - UMATILLA DEPOT ACTIVIT

Street or P.O. Box: UMATILLA DEPOT ACTIVITY

City or Town: HERMISTON | State: OR | ZIP Code: 97838-9544

Phone Number (area code and number): 503-564-5200

B. Owner Type: F

C. Change of Owner Indicator: Yes ☐ No X

Date Changed: Month / Day / Year

IX. SIC Codes (4-digit, in order of significance)

Primary: 9711 (description) NATIONAL SECURITY (U.S. ARMY)

Secondary: (description)

Secondary: (description)

Secondary: (description)

X. Other Environmental Permits (see instructions)

A. Permit Type (enter code)	B. Permit Number	C. Description
	25-0024	AIR CONTAINMENT DISCHARGE PERMIT
	SW320	SOLID WASTE DISPOSAL PERMIT
	HWL-10	SITE COLLECTION LICENSE STORAGE OF HAZARDOUS WASTE. PART B RCRA PERMITTED & INTERIM PERMIT STATUS BLDG. 203, K-BLOCK, J-BLOCK IGLOOS AND K-BLOCK ARE INTERIM STATUS PENDING COMPLETION OF THIS PERMITTING PROCESS.

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 12-31-91
GSA No. 0246-EPA-GT

EPA I.D. Number (enter from page 1)												Secondary ID Number (enter from page 1)											
R	6	2	1	3	8	2	0	9	1	7													

XI. Nature of Business (provide a brief description)

The Umatilla Chemical Agent Disposal Facility has been designed to demilitarize, by incineration, munitions and bulk items that contain chemical agents (GB, VX, and Mustard).

XII. Process - Codes and Design Capacities

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Twelve lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided in Item XIII.

B. PROCESS DESIGN CAPACITY - For each code entered in column A, enter the capacity of the process.

1. AMOUNT - Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process unit.

2. UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

C. PROCESS TOTAL NUMBER OF UNITS - Enter the total number of units used with the corresponding process code.

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	DISPOSAL:	
D79	INJECTION WELL	GALLONS; LITERS; GALLONS PER DAY; OR LITERS PER DAY
D80	LANDFILL	ACRE-FEET OR HECTARE-METER
D81	LAND APPLICATION	ACRES OR HECTARES
D82	OCEAN DISPOSAL	GALLONS PER DAY OR LITERS PER DAY
D83	SURFACE IMPOUNDMENT	GALLONS OR LITERS
	STORAGE:	
S01	CONTAINER (barrel, drum, etc.)	GALLONS OR LITERS
S02	TANK	GALLONS OR LITERS
S03	WASTE PILE	CUBIC YARDS OR CUBIC METERS
S04	SURFACE IMPOUNDMENT	GALLONS OR LITERS
	TREATMENT:	
T01	TANK	GALLONS PER DAY OR LITERS PER DAY
T02	SURFACE IMPOUNDMENT	GALLONS PER DAY OR LITERS PER DAY
T03	INCINERATOR	SHORT TONS PER HOUR; METRIC TONS PER HOUR; GALLONS PER HOUR; LITERS PER HOUR; OR BTU'S PER HOUR
T04	OTHER TREATMENT (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundment or incinerators. Describe the processes in the space provided in Item XIII.)	GALLONS PER DAY; LITERS PER DAY; POUNDS PER HOUR; SHORT TONS PER HOUR; KILOGRAMS PER HOUR; METRIC TONS PER DAY; METRIC TONS PER HOUR; OR SHORT TONS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
GALLONS PER HOUR	E
GALLONS PER DAY	U
LITERS	L
LITERS PER HOUR	H
LITERS PER DAY	V
SHORT TONS PER HOUR	D
METRIC TONS PER HOUR	W
SHORT TONS PER DAY	N
METRIC TONS PER DAY	S
POUNDS PER HOUR	J
KILOGRAMS PER HOUR	R
CUBIC YARDS	Y
CUBIC METERS	C
ACRES	B
ACRE-FEET	A
HECTARES	Q
HECTARE-METER	F
BTU's PER HOUR	K

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 12-31-91
GSA No. 0246-EPA-OT

EPA I.D. Number *(enter from page 1)*: O R 6 2 1 3 8 2 0 9 1 7

Secondary ID Number *(enter from page 1)*:

XII. Process - Codes and Design Capacities *(continued)*

EXAMPLE FOR COMPLETING ITEM XII (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

Line Number	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	C. PROCESS TOTAL NUMBER OF UNITS	FOR OFFICIAL USE ONLY
X 1	S 0 2	600	G	0 0 2	
X 2	T 0 3	20	E	0 0 1	
1	S 0 1	30,810	G	0 0 1	
2	S 0 2	6,900	G	0 0 3	
3	S 0 2	188,000	G	0 0 4	
4	S 0 2	1,960	G	0 0 2	
5	T 0 3	3.3	D	0 0 2	
6	T 0 3	1.2	D	0 0 1	
7	T 0 3	14.4	D	0 0 1	
8	T 0 3	0.53	D	0 0 1	
9					
10		(See XIX)			
11					
12					

NOTE: If you need to list more than 12 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for additional treatment processes in Item XIII.

XIII. Additional Treatment Processes *(follow instructions from Item XII)*

Line Number (enter numbers in sequence with Item XII)	A. PROCESS CODE	B. TREATMENT PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. TREATMENT PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	C. PROCESS TOTAL NUMBER OF UNITS	D. DESCRIPTION OF PROCESS
9	T 0 4	22,896	U	0 0 3	The Brine Reduction Area contains three rotary double-drum dryers.
10	T 0 4	95,472	U	0 0 3	The Brine Reduction Area contains three evaporator packages.
	T 0 4				
	T 0 4				

EPA I.D. Number *(enter from page 1)*: R 6 2 1 3 8 2 0 9 1 7

Secondary ID Number *(enter from page 1)*:

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. ESTIMATED ANNUAL QUANTITY - *For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C. UNIT OF MEASURE - *For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that processes that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of Item XIV-D(1).*
3. *Enter in the space provided on page 7, Item XIV-E, the line number and the additional code(s).*

2. PROCESS DESCRIPTION: *If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).*

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. *Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.*
2. *In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.*
3. *Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line number	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESS (1) PROCESS CODES (enter)	D. PROCESS (2) PROCESS DESCRIPTION (if a code is not entered in D(1))
X 1	K 0 5 4	900	P	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 12-31-91
GSA No. 0246-EPA-OT

EPA I.D. Number *(enter from page 1)*: O R 6 2 1 3 8 2 0 9 1 7

Secondary ID Number *(enter from page 1)*:

XIV. Description of Hazardous Wastes *(continued)*

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	P 9 9 9			S 0 1 S 0 2 T 0 3	SEE XIX FOR DISCUSSION
2	D 0 0 1			S 0 1 S 0 2 T 0 3	ON XIV B. AND C.
3	D 0 0 2			S 0 1 S 0 2 T 0 3	
4	D 0 0 3			S 0 1 S 0 2 T 0 3	
5	D 0 0 4			S 0 1 S 0 2 T 0 3	
6	D 0 0 5			S 0 1 S 0 2 T 0 3	
7	D 0 0 6			S 0 1 S 0 2 T 0 3	
8	D 0 0 7			S 0 1 S 0 2 T 0 3	
9	D 0 0 8			S 0 1 S 0 2 T 0 3	
10	D 0 0 9			S 0 1 S 0 2 T 0 3	
11	D 0 1 0			S 0 1 S 0 2 T 0 3	
12	D 0 1 1			S 0 1 S 0 2 T 0 3	
13	D 0 2 2			S 0 1 S 0 2 T 0 3	
14	D 0 2 8			S 0 1 S 0 2 T 0 3	
15	D 0 3 0			S 0 1 S 0 2 T 0 3	
16	D 0 4 3			S 0 1 S 0 2 T 0 3	
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 12-31-91
GSA No. 0246-EPA-OT

EPA I.D. Number *(enter from page 1)*: 0 R 6 2 1 3 8 2 0 9 1 7

Secondary ID Number *(enter from page 1)*:

XIV. Description of Hazardous Waste *(continued)*

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 6.

Line Number	Additional Process Codes (enter)
1 –	T04
16	

XV. Map

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements. (See XIX)

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail). (See XIX)

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail). (See XIX)

XVIII. Certification(s)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature	Date Signed

Name and Official Title *(type or print)*
Moses Whitehurst, Jr., Lieutenant Colonel, U.S. Army, Commanding Officer

Operator Signature	Date Signed
See XIX	

Name and Official Title *(type or print)*
See XIX

X. Comments

II. The full name of the facility is Umatilla Chemical Agent Disposal Facility (UMCDF).

(Comments Continued)

Note: All applicants should mail this form to the appropriate EPA Regional or State Office. (refer to instructions for more information)

CONTINUATION SHEET

VII. At this time, the Operator(s) of the UMCDF has not been determined by the U.S. Department of the Army. Once an Operator(s) has been selected for this facility, all information pertaining to the Operator(s) will be submitted as a permit notification to complete Section VII of this RCRA permit application and Section XVIII.

XII. Line 1 = Container Storage in the Container Handling Building
Line 2 = Spent Decontamination Solution Holding Tanks (3)
Line 3 = Brine Surge Tanks (4)
Line 4 = Agent holding tank (1); Agent surge tank (1)
Line 5 = Liquid Incinerators (2)
Line 6 = Deactivation Furnace System
Line 7 = Metal Parts Furnace
Line 8 = Dunnage Incinerator

XIV. B. and C. The U.S. Army has not declassified the exact quantities of munitions containing chemical agents that are stockpiled at this location. For national security purposes, the U.S. Army cannot supply the estimated annual quantity of these materials to be demilitarized at the UMCDF. Since all waste numbers listed in Section XIV are contained in the agent related wastes, exact quantities cannot be reported.

XV. See Figure B-2-1 in Section B of the permit application for the applicable map.

XVI. and XVII. Since this is a new facility, Sections XVI and XVII are not applicable. See Section B of the RCRA Part B permit application for appropriate facility drawings.

XVIII. At this time, the Operator(s) of the UMCDF has not been determined by the U.S. Department of the Army. Once an Operator(s) has been selected for this facility, all information pertaining to the Operator(s) will be submitted as a permit notification to complete Section VII of this RCRA permit application and Section XVIII.

(THIS PAGE INTENTIONALLY LEFT BLANK)

UMATILLA COUNTY PLANNING DEPARTMENT

Umatilla County Courthouse, 216 S.E. 4th ST., Pendleton, Oregon 97801
Phone: 278-7111, Ext. 252

July 30, 1986

Mr. Dan Saltzman
CH2M Hill
2020 SW Fourth Ave.
Portland, OR 97201

Dear Mr. Saltzman:

Umatilla County recognizes the Army's land use authority over the Umatilla Depot. The County Comprehensive Plan designates the Depot as "federal land" and thus not under the jurisdiction of the County. However, the plan does have a policy to promote coordination and cooperation between the County and federal agencies on land use matters. Your request for County comment is an example of the excellent relations between the County and the Army on land use issues.

Sincerely,

Dennis A. Olson
Planning Director

DAO:vt

[redacted]
...T OF ENVIRONMENTAL QUALITY
...W. FIFTH AVENUE
...BOX 1760
...TLAND, OR 97207

FOR DEQ USE ONLY

LAND USE COMPATIBILITY STATEMENT
FOR ON-SITE SEWAGE DISPOSAL SYSTEMS

APPLICANT'S NAME	MAILING ADDRESS	PHONE
DEPARTMENT OF THE ARMY Program Manager for Chemical Demilitarization	Aberdeen Proving Ground Maryland 21010-5401 CITY STATE ZIP	(301)671-3337/3633

PROPERTY LOCATION

TOWNSHIP	RANGE	SECTION	TAX LOT OR ACCT NO
4N	27		100
SUBDIVISION/PROJECT	**LOT**	**BLOCK**	**COUNTY**
			Morrow

☒ PROPERTY IS A LOT OF RECORD CREATED BEFORE AUGUST 1, 1981.

PROPOSED LAND USE

Chemical Stockpile Disposal Facility - Air Contaminant Discharge Permit
& Hazardous Waste Treatment, Storage and Disposal Permit

STATEMENT OF COMPATIBILITY FROM APPROPRIATE LAND USE AUTHORITY
(An equivalent statement may be provided in lieu of this form)

PROPERTY'S ZONING DESIGNATION

EFU

THE ABOVE PROPOSAL HAS BEEN REVIEWED AND FOUND TO BE:

☒ COMPATIBLE WITH THE LCDC ACKNOWLEDGED COMPREHENSIVE PLAN
☐ NOT COMPATIBLE WITH THE LCDC ACKNOWLEDGED COMPREHENSIVE PLAN

OR

☐ CONSISTENT WITH THE STATEWIDE PLANNING GOALS
☐ NOT CONSISTENT WITH THE STATEWIDE PLANNING GOALS

REASON FOR MAKING OF COMPATIBILITY/INCOMPATIBILITY

Site Complies with Morrow County Comprehensive Plan

PROPERTY IS LOCATED (CHECK ONE)

☐ INSIDE CITY
☐ INSIDE URBAN GROWTH BOUNDARY OUTSIDE CITY LIMITS
☒ OUTSIDE URBAN GROWTH BOUNDARY

LAND USE AUTHORITY

Morrow County Planning Department

SIGNED	TITLE	DATE
[signature]	Director, Planning Department	9/27/90

CITY/COUNTY CONCURRENCE IF INSIDE URBAN GROWTH BOUNDARY

SIGNED TITLE DATE

ATTACHMENT 2

WASTE ANALYSIS PLAN

The Umatilla Depot Activity (UMDA), in northeastern Oregon, is near Hermiston, Oregon, approximately 10 miles southwest of the city of Umatilla. The following treatment processes are based on the destruction of chemical agents and related munitions by incineration at the Umatilla Chemical Demilitarization Facility (UMCDF). The waste generated from Munition/Bulk Items Processing, Chemical Agent Processing, Dunnage Processing, Air Pollution Abatement System, and Chemical Agent Demilitarization Process will be characterized and analyzed to provide effective chemical agent management activities.

The following sections address the various components of the UMCDF Waste Analysis Plan. These components include analytical parameters and the rationale for their selection, test methods, sampling methods, frequency of analyses, additional requirements for wastes generated offsite, additional requirements for ignitable, reactive, or incompatible wastes, and laboratory quality assurance/quality control procedures. In effect, the Waste Analysis Plan delineates the waste parameters that will be determined prior to waste treatment or incineration at the UMCDF. The Waste Analysis Plan also characterizes wastes generated at the UMCDF, such as: treatment residues, brine salts, spent decontamination solutions, and incinerator pollution abatement system brines.

As previously discussed, the Army is using production knowledge, quality assurance and analytical data, and engineering judgment to characterize wastes to be treated at the UMCDF. The Army is both the chemical agent manufacturer and UMCDF designer and owner; therefore, the UMCDF was engineered to specifically achieve the complete thermal destruction of each of the chemical agents and will be operated with attention directed to minimizing the risk associated with all chemical agent management activities.

Parameters and Rationale

The analytical parameters and rationale for their selection are described by waste category in the paragraphs below. This information is summarized in Table C-2-1[1]. At a minimum, all wastes to be managed and treated from the incineration process, and the resultant residues will be managed as a hazardous waste.

Chemical Agents

Production knowledge, analytical data, and quality assurance data have been used along with engineering knowledge to characterize the chemical agents and to design the optimum treatment units and the UMCDF for their destruction. Although the chemical agents are well-defined solid wastes that are to be thermally destroyed under strict control, chemical agent in munitions will be obtained and tested for total percentage of chemical agent.

Explosives and Propellants

The fill specifications will be used to ascertain the amount of explosive and propellant being fed to the Deactivation Furnace System. Data available from manufacture and quality control for these materiels have been used with engineering knowledge to characterize them as hazardous wastes and to develop and assess effective treatment processes. Information gathered during pilot tests has demonstrated the ability of the proposed incinerators to adequately destroy these items.

Spent Decontamination Solution

The spent decontamination solution will be characterized and managed according to the hazardous waste numbers applicable to chemical agents (mustard, GB, and VX) and will be incinerated in one of the Liquid Incinerators.

[1]All tables are located at the end of this section.

Brines

The brines generated from the Liquid Incinerators, Metal Parts Furnace, and Deactivation Furnace System pollution abatement systems will be tested for specific gravity, the presence of chemical agents, selected organics associated with chemical agent decomposition (chloroform [D022], 1,2-dichloroethane [D028], 2,4-dinitrotoluene [D030], and vinyl chloride [D043]), pH, Toxicity Characteristic metals, Total Chlorine and BTU Value. These analyses are necessary for proper operation of the evaporator packages and the drum dryers in the Brine Reduction Area.

Liquid Incinerator Slag

The slag generated from the incineration of spent decontamination solution and chemical agent in the Liquid Incinerators will be tested for chemical agent, free liquids, and Toxicity Characteristic metals and organics. Chemical agent analysis will be conducted to verify chemical agent destruction. Analysis for Toxicity Characteristic metals and organics will determine offsite treatment and disposal methods.

Brine Salts

The brine salt generated from the operation of the drum dryers will be tested for Toxicity Characteristic metals and organics and for reactivity. The specific tests for reactivity will include testing for the presence of sulfides and inorganic fluorides. Brine salts will also be tested for the presence of free liquids to determine offsite treatment and disposal methods at an approved hazardous waste treatment, storage, or disposal facility.

Deactivation Furnace System Ash and Cyclone Residue

The ash and cyclone residue generated from the Deactivation Furnace System will be tested for Toxicity Characteristic metals and organics, the presence of chemical agents, PCBs, dioxins, furans, explosives and propellants, free liquids, and reactivity (sulfides and inorganic fluorides). The wastes being treated in the Deactivation Furnace System will generate Toxicity Characteristic ash and residue. Testing the wastes for chemical agents, explosives, propellants, dioxins, and furans will provide additional information on the destruction efficiency of the incinerators and information that will be necessary for further management of the waste. The analysis for reactivity will establish the container management practices.

Metal Parts Furnace Ash

Ash generated in the operation of the Metal Parts Furnace will be tested for the same parameters as the Deactivation Furnace ash; testing for the presence of explosives and propellants will not be done since these wastes do not enter this incinerator.

Dunnage Incinerator Ash and Baghouse Residue

The ash and pollution abatement system baghouse residue generated from the Dunnage Incinerator will be tested for Toxicity Characteristic metals and organics, presence of chemical agents, dioxins, furans and free liquids. If the material is found to contain chemical agents, it will be incinerated in the Dunnage Incinerator. The analysis for free liquids and Toxicity Characteristic metals and organics will establish how the wastes can be managed.

Ventilation System Filters

The spent high efficiency particulate air filters and prefilters will be tested. Analyses will provide useful information to the management of these items, as these items will contain low levels of contaminants (chemical agents) and the treatment units are designed to attain a minimum of 99.9999 percent destruction removal efficiency of pure chemical agent. The air and prefilters will be tested to verify the feed limit demonstrated in the trial burns.

Spent Carbon

The spent carbon generated from the filters for the incinerators pollution abatement systems, Deactivation Furnace System cyclone, ventilation system, and Agent Collection Tank System will be tested because it will be managed and treated in the Dunnage Incinerator as hazardous waste. The spent carbon will be tested for chemical agent, TC Metals, dioxins and furans, TC Organics and to verify the feed limit demonstrated in the trial burn.

Laboratory Waste

Laboratory wastes generated at the UMCDF may include chemical agent samples, various spent reagents and solvents, and solid wastes. These wastes may contain Toxicity Characteristic metals and organics that are associated with the chemical agents and wastes related to the chemical agents. Laboratory wastes will be analyzed for ignitability, corrosivity, Toxicity Characteristic metals and organics, and chemical agent. Generator knowledge and sampling will be applied to characterize the laboratory waste. If liquid laboratory wastes are suspected of being contaminated with chemical agent, they will be decontaminated before release into the LAB chemical waste storage tank and incineration in the Liquid Incinerators. Chemical agent-contaminated solid wastes will be bagged and incinerated in the Dunnage Incinerator. Laboratory wastes not contaminated with chemical agent will be packaged, stored onsite, and shipped offsite to an approved hazardous waste treatment, storage, or disposal facility in accordance with all generator and LDR requirements.

Metal Munitions Casings and Parts

Metal munitions and parts will contain residual quantities of chemical agent, and will be decontaminated to the 5X level in the Metal Parts Furnace. Although the Metal Parts Furnace has been designed specifically to destroy chemical agents, analysis will be required to verify the metal munitions casings and parts have met the treatment standard 5X.

After incineration, metal scrap will be tested, sampled and analyzed to verify indeed 5X treatment standard has been achieved, then recycled at an approved recycling facility, as noted below, and will be exempt from further regulation under RCRA as a hazardous waste. Incinerator ash (other than recyclable metals) will be containerized and sent offsite to an approved hazardous waste treatment, storage, or disposal facility.

Metal Scrap

Metal scrap that has been incinerated for **at least** 15 minutes at a minimum temperature of 1,000°F in the Metal Parts Furnace, Deactivation Furnace System, or Dunnage Incinerator will be considered to meet Army Level 5X decontamination requirements and deemed nonhazardous. Although published data and studies conducted to date indicate that Level 5X decontamination will destroy residual chemical agent contamination; confirmatory sampling and analysis of the treated scrap metal will be necessary to guarantee protection of human health and environment.

After incineration in one of the three incinerators, noted above, the metal scrap will be tested and verified to meet the treatment standard 5X through sampling and analysis and then recycled at an approved recycling facility and will be exempt from further regulation under RCRA as a hazardous waste.

Miscellaneous Solid Wastes

Analysis will not be conducted on the miscellaneous solid wastes, also known as dunnage. Dunnage wastes and strainers will be managed in accordance with the treatment standards applicable to the hazardous waste numbers assigned to the chemical agents.

Container Handling Building Sump Liquids/Materials(i.e. Sludges, & slurries etc.)

Container Handling Building sump liquids/materials (i.e. Sludges, slurries, etc.) will include washdown liquid from routine maintenance duties. Sump liquids will be sampled and analyzed for the presence of chemical agent and Toxicity Characteristic metals (D004 through D011) and organics (D022, D028, D030, and D043) and corrosivity. If the material is determined to be hazardous, the liquid will be pumped out of the sump, containerized, and then transported to the Munitions Demilitarization Building for incineration in the Liquid Incinerators. If the sump liquids are found to be nonhazardous, they will be appropriately discharged.

[?]Process / wastewater

The process water and wastewater streams will be sampled and analyzed for chemical agent, Toxicity Characteristic metals and organics so that these streams are properly managed in accordance with all applicable hazardous waste regulations. Knowledge of process will ensure proper characterization of these streams. The streams should be sampled for each chemical agent munition campaign change.

Test Methods

The analytical methods and their references are listed in Table C-2-2 for each test parameter above. The munitions will be tracked using the inventory form presented in Figure C-1-1.

Sampling Methods

Table C-2-3 lists the specific equipment and methods (where appropriate) that will be used to obtain a representative sample of each waste type. One representative sample, plus appropriate quality assurance/quality control (QA/QC) samples, will be collected for each sampling event.

The Toxicity Characteristic Leaching Procedure may place additional requirements on the size of waste samples. When required, aliquots will be obtained for preliminary evaluation for nonvolatile analyte extraction, for volatile extractions, and for quality control.

A QA/QC program has been established to ensure the accuracy of sampling and analytical results. This program is detailed in Attachment C-5 of the March 1995 Part B Application which is hereby attached and made enforceable. Details of this program are summarized below for each of the waste streams to be analyzed.

Brines

The brines in the brine surge tank will be analyzed for specific gravity, chemical agent, Toxicity Characteristic metals and organics, pH, Total Chlorine, and BTU Value. If chemical agent is detected in the brine, two more brine samples will be taken and analyzed for the chemical agent. If it is confirmed that chemical agent is present in the brine, caustic will be added to the brine surge tanks. Samples of the brine will then be collected and taken to the laboratory for chemical agent analysis. If chemical agent is not detected in the brine, the brine or will be treated in the evaporator packages and drum dryers in the Brine Reduction Area.

Liquid Incinerator Slag

The Liquid Incinerator slag will be sampled and analyzed for chemical agent, free liquids, and Toxicity Characteristic metals and organics. The slag will be sampled using a rotating coring device or hammer and chisel, which should allow for any variation in the waste composition.

Brine Salts

The brine salts are homogeneous in nature; therefore no special sampling technique will be necessary. Brine salts will be sampled using a thief, which should allow for any variation in the waste composition. The brine salts will be analyzed for Toxicity Characteristic metals and organics, reactivity, and free liquids.

Container Handling Building Sump Liquids/Materials

Container Handling Building sump liquids/materials will be analyzed for chemical agent, Toxicity Characteristic metals and organics and corrosivity. Representative grab samples will be taken to ensure proper characterization.

Incinerator Ash and Baghouse/Cyclone Residues

The sampling approach described previously for the brine salts will also be followed for the Deactivation Furnace System, Dunnage Incinerator, and Metal Parts Furnace ash; Deactivation Furnace System cyclone residue; and Dunnage Incinerator baghouse residue. The only difference will be that if chemical agent is detected in any of the waste types, all subsequent containers will be analyzed for chemical agent. Any ash or residue contaminated with chemical agent will be processed.

Laboratory Waste

The laboratory waste will be sampled and analyzed for ignitability, corrosivity, chemical agent, and Toxicity Characteristic metals and organics. No special sampling technique is needed due to the homogeneous nature of the waste. A thief will be used, which should allow for any variation in the waste composition.

Frequency of Analysis

Table C-2-4 shows the frequency of analyses for each waste type and parameter for which sampling and analysis have been specified. Wastes to be analyzed will be sampled more frequently in the start-up operations during each campaign change and trial burn operations of the UMCDF to QA/QC the wastes generated onsite. The frequency of analysis will be effectively managed to ensure compliance with all hazardous waste requlations by utilizing a tier system, in which the facility will sample less frequently as the waste streams become fully characterized over the life span of the facility.

Additional Requirements for Wastes Generated Offsite

All munitions and bulk items, that are handled at the UMCDF will originate onsite (UMDA). There will be no wastes received from offsite locations, and as such, no additional requirements are necessary.

Tracking of Hazardous Wastes

As previously discussed, the munitions and bulk items were produced for the exclusive use of the military, and therefore, were manufactured to government standards according to very strict quality control procedures. The specifications prescribed the amount of chemical agent fill, the weight of explosive in the burster, and where applicable, the weight of the propellant.

The UMCDF will use rigorous procedures for labeling, tracking, and keeping records on the munitions and bulk items prior to processing. Initially, a detailed account of every munition, bulk item, and onsite transport container brought to the UMCDF will be prepared. A sample tracking form is shown in Figure C-1-1. In addition, at the UMDA's Chemical Limited Area, munitions and bulk items are separated by item lots. Next to each lot is a metal box containing a magazine data card stating the production number and the quantity in each lot. The lot number is stenciled on each chemical munition and bulk item. By using the production lot number, the Army can specifically identify the type of munition, caliber (e.g., 155-mm or 8-inch), type of chemical agent, and date and place of manufacture. Furthermore, the type of chemical agent is also stenciled on each munition and bulk item and its onsite transport container.

An automated inventory system consisting of barcoding and automated graphic displays will be used as a means of monitoring chemical agent amounts by location in the UMCDF, and to verify manual records and logs.

Additional Requirements for Ignitable, Reactive, or Incompatible Wastes

The mission of the UMCDF is to treat and/or destroy munitions and bulk items. Every aspect of the UMCDF design and operation will acknowledge the hazards inherent in managing this waste type. UMCDF compliance with the regulatory requirements for handling ignitable, reactive, and incompatible wastes is addressed in Section F-5a.

Although ignitable, reactive, or otherwise incompatible chemicals may be present and used in the laboratory, they will not be contained, stored, or managed in a manner that could promote chemical reaction, fire, or explosion. Wastes that are not contaminated with chemical agent will be segregated, containerized, and stored onsite prior to shipment offsite to an approved hazardous waste treatment, storage, or disposal facility. Previous sections of this Waste Analysis Plan have indicated the ignitable and reactive characteristics of wastes to be managed at the UMCDF.

Laboratory Quality Assurance/Quality Control Procedures

Detailed procedures that will be used in the laboratory as appropriate for specific chemical agent analysis for which no EPA-approved methods currently exist are included in Attachment D-2 of the March 1995 Part B Application which is hereby attached to the permit. General quality control/quality assurance procedures are in accordance with the specified analytical methods for individual parameters (see Table C-2-2), as described in the EPA publication SW-846, "Test Methods for Evaluating Solid Wastes," and in accordance with "Laboratory Quality Assurance Program Plan For The Chemical Stockpile Disposal Programs," which includes an overall quality assurance/quality control plan for demilitarization of the chemical agent stockpile.

The Quality Assurance Project Plan for the trial burns is presented in Attachment D-5 and Sections D-5, D-6, D-7, and D-8 of this permit application.

QA/QC procedures for other waste sampling and analysis are detailed in the QA/QC Plan for waste sampling and analysis, which is included in Attachment C-5.

Table C-2-1
RATIONALE FOR SELECTION OF ANALYSIS TO PERFORM ON WASTE MATERIALS

Waste	Analysis	Rationale
Chemical Agents (mustard, GB, and VX) in Munitions and Bulk Items		Sampling and analysis will be conducted because chemical agents have aged, are aging, and must be characterized to insure feed limits match the feed limits verified as protective during the trial burns. During each campaign, a monthly sample of chemical shall be obtained and tested for total percentage of chemical agent.
Explosives/ Propellants in Munitions		Sampling and analysis will be conducted because the explosives and propellants have a long, but not perpetual shelf life and are undergoing slow chemical reactions that lead to the formation of daughter products. These wastes will be managed and stored as RCRA hazardous wastes. During each campaign, a monthly sample of explosives and propellants shall be obtained and tested for total percentage of Method 8230 constituents and for total metals.
Process/Wastewater	• TC Metals (D004 - D011) • TC Organics • Chemical Agent	Sampling and analysis will be conducted to ensure process/wastewater will be fully characterized and properly managed in accordance with all applicable hazardous waste regulations.

Table C-2-1 (continued)
RATIONALE FOR SELECTION OF ANALYSIS TO PERFORM ON WASTE MATERIALS

Waste	Analysis	Rationale
Spent Decontamination Solution and Solids		Spent decontamination solution will be managed and incinerated as hazardous wastes in accordance with BDAT standards applicable to the chemical agent and chemical agent-related wastes. Frequent analysis is not necessary because chemical agent levels in decontamination wastes are expected to be insignificant and will not affect management or treatment. Therefore, a quarterly sample will be obtained and described by color, turbidity, and tested for the presence of chemical agents and total chlorine.
Brine Salt	• TC Metals (D004 - D011) • Reactivity • Free liquids • TC Organics (D022, D028, D030, D043)	Metals are expected to be present in the brine salt and will be assessed for offsite management purposes and trend analysis for evaluating treatment system deterioration. Reactivity will be assessed for offsite management purposes and container compatibility. The absence of free liquids will be verified.
Ventilation System Filters (HEPA and Prefilters)	• Chemical Agent	Spent filters will be sampled and analyzed. Frequency of sampling and test methodology shall be in accordance with DEQ-approved methods. [Note to permit writer: Approvable test method to be made into a compliance item]
Spent Carbon (from DFS, MPF, DUN, and LIC PASs; Ventilation System; DFS Cyclone; and Agent Collection Tank System Filters)	• Chemical Agent • TC Metals • Dioxins & Furans • TC Organics	Spent carbon will be sampled and analyzed to determine if the additional loads will impact or overwhelm the incinerators; reducing their efficiency and performance.

Table C-2-1 (continued)
RATIONALE FOR SELECTION OF ANALYSIS TO PERFORM ON WASTE MATERIALS

Waste	Analysis	Rationale
Ash (DFS and MPF) and DFS Cyclone Residue	• TC Metals (D004-D011) • Chemical Agent • Free Liquids • Explosives and Propellants (DFS only) • Reactivity • TC Organics (D002, D028, D030, D043) • PCBs • Dioxins and Furans Analysis (DFS ash and cyclone residue only)	The listed analyses are necessary to establish presence of these constituents. Presence of chemical agent will require further processing/treatment. This waste will be tested for reactivity for container management purposes. The DFS ash and cyclone residue will be analyzed for dioxins and furans to determine further waste management needs. The analysis should be at least when residue is removed from the cyclone and the waste bin is full.
Ash and Baghouse Residue (DUN)	• TC Metals (D004-D011) • Chemical Agent • TC Organics (D022, D028, D043) • Free Liquids • Dioxins & Furans	The presence of chemical agent will require further processing/treatment. The presence of metals and organics could make the material a hazardous waste requiring additional offsite treatment. Verify the absence of free liquids.
Brine	• Chemical Agent • pH • TC Metals (D004-D011) • TC Organics (D022, D028,D030,D043) • Specific Gravity • Total Chlorine • BTU Value	Verify absence of chemical agent. Determine if heavy metals are present (have been previously identified) and if TC organic analytes associated with chemical agent decomposition are present. (Note: In lieu of analysis, these wastes may be managed and treated as hazardous wastes for all potentially applicable waste numbers.) Determine brine treatment needs.
LIC Slag	• Chemical Agent • TC Metals (D004-D011) • TC Organics (D022, D028, D043) • Free Liquids	The listed analyses are necessary to establish the presence/absence of these constituents. Chemical agent analysis conducted to verify chemical agent destruction.

Table C-2-1 (continued)
RATIONALE FOR SELECTION OF ANALYSIS TO PERFORM ON WASTE MATERIALS

Waste	Analysis	Rationale
Laboratory Wastes (liquid)	• Chemical Agent • TC Metals (D004 - D011) • TC Organics (D022, D028, D043) • Ignitability • Corrosivity	All laboratory wastes will be managed and incinerated in compliance with the treatment standards associated with the waste numbers assigned to chemical agent (D003-D011, D022, D028, and D043) and characteristic hazards of ignitability (D001) and corrosivity (D002) when applicable. Chemical agent present in samples may exhibit one or more of the above hazards, and will be incinerated accordingly. Liquid laboratory wastewaters will be stored in the LAB chemical waste storage tank prior to incineration in one of the LICs.
Laboratory Wastes (solid)	• Chemical Agent • TC Metals (D004-D011) • TC Organics (D022, D028, D043) • Ignitability • Corrosivity	If chemical agent contaminated, solid wastes will be bagged and incinerated.[a] Otherwise, the wastes will be characterized for offsite treatment, storage, or disposal based on the material/process generating the waste.
Metal Casings and Metal Parts	• Chemical Agent	The metal scrap will not be recycled and shipped offsite to an approved recycling facility until after the 5X decontamination requirements have been verified by both meeting the treatment standard (5X) and by verification sampling and analysis. The metal casings and parts will then be exempt from 40 CFR 261.6(a)(3)(B)(iv) as a hazardous waste.

Table C-2-1 (continued)
RATIONALE FOR SELECTION OF ANALYSIS TO PERFORM ON WASTE MATERIALS

Waste	Analysis	Rationale
Metal Scrap (DFS, MPF, and DUN)	• Chemical Agent	The metal scrap will not be recycled and shipped offsite to an approved recycling facility until after the 5X decontamination requirements have been verified by both meeting the treatment standard (5X) and by verification sampling and analysis. The metal scrap will then be exempt from 40 CFR 261.6(a) (3)(B)(iv) as a hazardous waste.
Miscellaneous Solid Wastes (Dunnage and strainers)	• Chemical Agent • TC Organics • TC Metals	Dunnage wastes will be managed in accordance with BDAT standards applicable to chemical agents. Analysis is not necessary since chemical agent levels in dunnage wastes are expected to be insignificant and will not affect management or treatment. However, strainers will be sampled to quantify and characterize the hazardous waste entrained in the process streams that utilize them. This will be done previous to the beginning of each chemical agent/munition campaign. It will ensure a more accurate accountability of solid wastes and the type of free liquids in those streams.
CHB Sump Liquids/ Materials (i.e. Sludges ,etc.)	• Chemical Agent • TC Metals (D004 - D011) • TC Organics (D022, D028, D043) • Corrosivity	CHB sump liquids/materials (i.e. sludges, etc.) will be sampled and analyzed for the presence of chemical agent and hazardous contaminants. If CHB liquids are determined to be nonhazardous, they will be appropriately discharged. However, if they are found to be hazardous, they will be pumped, containerized, and transported to the MDB for incineration in one of the LICs.

NOTES:

[a] As previously discussed, laboratory wastes that are not contaminated with chemical agent will not be incinerated onsite, but will be disposed offsite in accordance with generator and LDR requirements.

BDAT	=	best demonstrated available technology
CHB	=	Container Handling Building
DFS	=	Deactivation Furnace System
DUN	=	Dunnage Incinerator
HEPA	=	high efficiency particulate air
LDR	=	land disposal restriction
LIC	=	Liquid Incinerator
MDB	=	Munitions Demilitarization Building
MPF	=	Metal Parts Furnace
PAS	=	pollution abatement system
TC	=	Toxicity Characteristic

Table C-2-2

TEST METHODS

Parameter	Test Method	Reference[a]
GB and VX	Chloroform extraction followed by GC analysis	APCA-SR-S SOP No. ELS-2,3[a]
Mustard Agent	Hexane extraction followed by GC analysis	APCA-SR-S SOP No. ELS-4[a]
TCLP	Acid extraction of nonliquids Liquids--no extraction necessary	Method 1311
Arsenic	Atomic absorption--gaseous hydride	Method 7061, EPA 206.3
Selenium	Atomic absorption--gaseous hydride	Method 7741, EPA 270.3
Mercury	Automated cold vapor technique	Method 7471
Barium	Atomic absorption--direct aspiration	Method 7080, EPA 208.1
Cadmium	Atomic absorption--direct aspiration	Method 7130, EPA 213.1
Chromium	Atomic absorption--direct aspiration	Method 7190, EPA 218.1
Silver	Atomic absorption--direct aspiration	Method 7760, EPA 272.1
Lead	Atomic absorption--direct aspiration	Method 7420, EPA 239.1

Table C-2-2 (continued)

TEST METHODS

Parameter	Test Method	Reference[a]
Total Metals	Inductively-coupled plasma atomic emissions spectrometry (except mercury) and automated cold vapor technique (mercury)	Method 6010 and Method 747
Chloroform	Gas chromatograph	Method 8010
1,2-Dichloro-ethane	Gas chromatograph	Method 8010
2,4-Dinitro-toluene	Gas chromatograph, Mass spectrometry	Method 8250
Vinyl Chloride	Gas chromatograph	Method 8010
Tetryl	Acetonitrile extraction followed by HPLC analysis	CAMDS SOP No. LAB 32-00-02-02[a]
TNT	Acetonitrile extraction followed by HPLC analysis	Method 8330
Nitroglycerine	Acetonitrile extraction followed by HPLC analysis	CAMDS SOP No. LAB 32-00-02-02[a]
RDX	Acetonitrile extraction followed by HPLC analysis	CAMDS SOP No. LAB 32-00-02-02[a]

Table C-2-2 (continued)

TEST METHODS

Parameter	Test Method	Reference[a]
Nitrocellulose	Water wash, followed by acetone extraction, followed by reaction with caustic, followed by EPA method 354.1 spectrophotometric analysis	EPA 354.1
pH	Electrometric	Method 9040
Cyanides	Colormetric, pyride-barbituric acid	Method 9010
Inorganic Fluorides	Potentiometric	EPA 340.2
Sulfides	Colormetric, Methylene Blue	Method 9030
Free Liquids	Paint Filter Liquids Test Free Liquids Test	Method 9095 Method 9096
Dioxins and Furans	Inductively-coupled plasma atomic emissions spectrometry (except mercury) and automated cold vapor technique (mercury)	Method 8280
Specific Gravity	Digital density meter, Hydrometer, Pycnometer	ASTM D4052 ASTM D287 ASTM D369

NOTES:

[a] Where an EPA-approved method for analysis exists (SW-846 or equivalent), it shall be used. Methods developed by the Army will be used for those compounds that do not have EPA methods. These Army methods are provided in Attachment D-2.

ASTM = American Society for Testing and Materials
CAMDS = Chemical Agent Munitions Disposal System
GC = Gas Chromatograph
HPLC = High Performance Liquid Chromatography
SOP = Standing Operating Procedures
TCLP = Toxicity Characteristic Leaching Procedure

Table C-2-3

SAMPLING METHODS

Waste	Analysis	Sampling Equipment and Method[a]
Brine	• Chemical Agent • TC Metals • pH • TC Organics • Specific Gravity • Total Chlorine • BTU Value	Sample will be obtained from the discharge side of the brine circulating pump. Waste is homogeneous, so no other special sampling techniques are necessary.
Brine Salt	• TC Metals • Reactivity • Free Liquids • TC Organics	Thief: No special sampling techniques are necessary since waste is homogeneous. The use of the thief should allow for any variation in waste composition.
Ash (DFS and MPF)	• TC Organics • TC Metals • Chemical Agent • Free Liquids • Explosives and Propellants • Reactivity • Dioxins and furans (DFS only) • PCBs	Thief or Auger: ASTM Standard D420-69 or ASTM Standard D346-75.

Table C-2-3 (continued)

SAMPLING METHODS

Waste	Analysis	Sampling Equipment and Method[a]
Cyclone Residue (DFS)	• Chemical Agent • Explosives and Propellants (DFS only) • Reactivity • Free Liquids • TC Organics • TC Metals • Dioxins and Furans • PCBs	Thief: No special sampling techniques are necessary since waste is homogeneous. The use of the thief should allow for any variation in waste composition.
Ash and Baghouse Residue (DUN)	• TC Organics • TC Metals • Chemical Agent • Free Liquids • Dioxins & Furans	Thief or Auger: ASTM Standard 32-42, Sampling ferro alloys.
LIC Slag	• Chemical Agent • TC Metals • TC Organics • Free Liquids	Rotating coring device or hammer and chisel: No special sampling techniques are necessary since waste will be homogeneous. The use of a rotating coring device or hammer and chisel should allow for any variation in waste composition.

Table C-2-3 (continued)

SAMPLING METHODS

Waste	Analysis	Sampling Equipment and Method[a]
Laboratory Wastes (liquid)	• Chemical Agent • TC Metals • TC Organics • Ignitability • Corrosivity • Process Knowledge	Thief or COLIWASA: No special sampling necessary since laboratory waste will be homogeneous. The use of the thief/COLIWASA should allow for any variation in waste composition.
Laboratory Wastes (solid)	• Chemical Agent • TC Metals • TC Organics • Ignitability • Corrosivity • Process Knowledge	Thief, grab, or process knowledge.
CHB Sump Liquids/Materials	• Chemical Agent • TC Metals • TC Organics	Grab
Chemical Agents in Munitions and Bulk Items	• In-line Grab Sample	
Explosives/ Propellants in Munitions	• In-line Grab Sample	

Table C-2-3 (continued)

SAMPLING METHODS

Waste	Analysis	Sampling Equipment and Method[a]
Spent Decontamination Solution	• Grab Sample	
Ventilation System Filters (HEPA filters and prefilters)	• Grab Sample	
Miscellaneous Solid Wastes (Dunnage & strainers)	• Process Knowledge (dunnage) • Grab Sample (strainers)	None
Spent Carbon	• Grab Sample	
Metal Casings and Metal Parts	• Lot Sampling (for chemical agent 5X verification)	
Metal Scrap (DFS, MPF, and DUN)	• Lot Sampling (for chemical agent 5X verification)	

NOTES:

[a] Sample containers and preservation techniques, if any, will be in accordance with individual method of analysis (see Table C-2-2). See also QA/QC Plan in Attachment C-5.

CHB = Container Handling Building

DUN = Dunnage Incinerator

DFS = Deactivation Furnace System

HEPA = high efficiency particulate air

LIC = Liquid Incinerator

MPF = Metal Parts Furnace

TC = Toxicity Characteristic

Table C-2-4

SAMPLING FREQUENCY

Waste	Analysis	Frequency
Brine	• Chemical Agent	Each batch
	• TC Metals	Each batch
	• TC Organics	Each chemical agent/munition change
	• pH	Each batch
	• Specific Gravity	Each batch
Brine Salt	• TC Organics	Each chemical agent/munition change
	• TC Metals	Each container
	• Reactivity	Each container
	• Free Liquids	Each container
Ash (DFS, MPF)	• TC Organics	Each chemical agent/munition change
	• TC Metals	Each batch
	• Chemical Agent	Each batch
	• Free Liquids	Each batch
	• Explosives and Propellants (DFS only)	Each chemical agent/munition change
	• Reactivity	Each chemical agent/munition change
	• Dioxins and furans (DFS only)	1 sample/container generated

Table C-2-4 (continued)

SAMPLING FREQUENCY

Waste	Analysis	Frequency
Cyclone Residue (DFS)	• Chemical Agent	1 sample/drum generated
	• Explosives and Propellants	1 sample/drum generated
	• Reactivity	
	• Free Liquids	1 sample/drum generated
	• TC Organics	1 sample/drum generated
	• TC Metals	1 sample/drum generated
	• Dioxins and Furans	1 sample/drum generated 1 sample/drum generated
Ash and Baghouse Residue (DUN)	• TC Organics	Each chemical agent/munition change
	• TC Metals	Each batch
	• Chemical Agent	Each batch
	• Free Liquids	Each batch
LIC Slag	• Chemical Agent	Each chemical agent/munition change
	• TC Metals	Each container generated
	• TC Organics	Each chemical agent/munition change
	• Free Liquids	Each chemical agent/munition change
Laboratory Wastes (liquid)	• Chemical Agent	As generated or at a minimum of once per year
	• TC Metals	As generated or at a minimum of once per year
	• TC Organics	As generated or at a minimum of once per year
	• Ignitability	Each chemical agent/munition change
	• Corrosivity	Each chemical agent/munition change

Table C-2-4 (continued)

SAMPLING FREQUENCY

Waste	Analysis	Frequency
Laboratory Wastes (solid)	• Chemical Agent	As generated or at a minimum of once per year
	• TC Metals	As generated or at a minimum of once per year
	• TC Organics	As generated or at a minimum of once per year
	• Ignitability	Each chemical agent/munition change
	• Corrosivity	Each chemical agent/munition change
CHB Sump Liquids/ Materials (i.e.sludges,slurries etc.)	• Chemical Agent	As generated
	• TC Metals	As generated
	• TC Organics	As generated
Chemical Agents (GB, VX, and mustard) in Munitions and Bulk Items	• Chemical Agent • Total Metals	Monthly, during campaigns
Explosive/ Propellants in Munitions	• Explosives and Propellants • Chemical Agent • Total Metals	Monthly, during campaigns
Spent Decontamination Solution	• Chemical Agent • Total Metals • Total Organic Carbon	Quarterly

Table C-2-4 (continued)

SAMPLING FREQUENCY

Waste	Analysis	Frequency
Ventilation System Filters (HEPA filters and prefilters)	• *To be determined as compliance item*	
Miscellaneous Solid Wastes (dunnage & strainers)	• None	N/A
	• Chemical Agent	Each chemical agent/munition change
	• Total Organics	Each chemical agent/munition change
Spent Carbon	• Total Metals	Each chemical agent/munition change
	• Total Organics	Each chemical agent/munition change
	• Chemical Agent	Each chemical agent/munition change
Metal Casings and Metal Parts	• Total Metals	Each chemical agent/munition change
	• Total Organics	Each chemical agent/munition change
	• Chemical Agent	Each chemical agent/munition change
Metal Scrap (DFS, MPF, DUN)	• Chemical Agent	Each chemical agent/munition change
Process/wastewater	• Chemical Agent	Monthly, during campaigns
	• TC Metals	Monthly, during campaigns
	• TC Organics	Monthly, during campaigns

NOTES:

CHB = Container Handling Building
DFS = Deactivation Furnace System
DUN = Dunnage Incinerator
HEPA = high efficiency particulate air
LIC = Liquid Incinerator
MPF = Metal Parts Furnace
N/A = not applicable
TC = Toxicity Characteristic

ATTACHMENT 3

INSPECTION SCHEDULE

General Inspection Requirements

The UMCDF will be inspected according to a prescribed inspection schedule designed to detect equipment deterioration and prevent possible equipment malfunctions that will cause a release of hazardous wastes to the environment or pose a threat to human health. The inspection schedule document and inspection logbook will be located at the UMCDF. At a minimum, the inspection program will include inspections of the equipment items listed in Table F-2-1.[1] The inspection frequencies are also shown in Table F-2-1.

Inspection logs and documents will be available at the Process Support Building of the UMCDF.

Types of Problems

The types of problems to look for during inspections are identified in Table F-2-1 in the "Types of Problems" column.

Frequency of Inspections

The frequency of inspection is given in Table F-2-1 in the "Frequency" column. The frequency of inspection is based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections. The inspections will be performed often enough to allow identification of problems in time to correct them before they harm human health or the environment.

Where appropriate, inspection frequencies have been developed from operational knowledge gained at the Chemical Agent Munitions Disposal System currently in operation at the Tooele Army Depot, Tooele, Utah. Manufacturer recommendations, Army Standing Operating Procedures, Occupational Safety and Health Administration regulations, and specific regulated unit requirements will be adhered to by the UMCDF.

---

[1]All tables are located at the end of this section.

Safety and Emergency Equipment

Safety and emergency equipment will be inspected as indicated in Table F-2-1. The results of each inspection will be recorded on the log sheets in Attachment F-2. The weekly inspection of safety and emergency equipment will be an in-depth inspection designed to detect depleted stock or items with excessive wear.

The following procedures will be used to determine that outer gloves and boots used in Demilitarization Protective Ensembles are decontaminated in the airlocks after use in the process areas:

- The items will be decontaminated by thoroughly washing them, first with decontamination solution for the particular chemical agent and then with clear water.

- The boots and gloves (and Demilitarization Protective Ensembles) will be tested to assure that local chemical agent concentrations in the air immediately above the surface of the boots and gloves are less than 0.2 milligram per cubic meter of nerve agent GB and mustard agent HD, or 0.4 milligram per cubic meter of nerve agent VX.

- The gloves and boots will be removed from the person and placed immediately in a plastic bag. The bag will be sealed.

- After the gloves and boots are confirmed to be decontaminated by the above procedure, they will be sent to the laundry to be washed and reissued.

Specific Process Inspection Requirements

Container Inspection

The containers stored in the Container Handling Building (used to store munitions or bulk items awaiting demilitarization) will be inspected weekly for leaking munitions, bulk items, or overpacks; rust; corrosion; other deterioration; structural defects; or trends that could indicate failure, such as containers out of proper position or alignment, dents, unusual appearance, or signs of tampering.

Also inspected will be the Container Handling Building's secondary containment system, including the curbing, trenches, drains, flooring, sump, sump pumps, and the munition materiel handling system.

All containers stored in the Container Handling Building for a week or greater will be monitored through the chemical agent monitor port using the equipment and procedures designated in Attachments D-2 and F-1 to determine whether the munitions, bulk items, or overpacks inside the containers are leaking.

If any of the containers are found to contain leaking munitions, bulk items, or overpacks, they will be prioritized over other munitions/bulk items in the Container Handling Building for processing and chemical agent monitoring of the Container Handling Building will be performed continuously. All onsite transport containers/overpack containers (for spray tanks) will be coded for tracking purposes and visually assessed once a year for structural integrity and vapor tightness. The results of this assessment will be presented in a written report and maintained at the UMCDF in the operating record. Any onsite transport containers or overpack containers (for spray tanks) that do not pass this assessment will be taken out of service immediately and not returned to service unless they are repaired and pass a reassessment. Documentation of the reassessment will be performed as described above.

In addition, the containment system will be inspected as discussed in Table F-2-1.

Tank System Inspection

The permitted hazardous waste tank systems (Agent Collection Tank System, Brine Surge Tank System, and Spent Decontamination Holding Tank System) will be inspected in a similar manner as described in this section.

Each tank system will be thoroughly inspected on at least a daily basis. The inspection will address overfill and spill control equipment, aboveground portions of the tank system, data gathered from monitoring and leak detection equipment, construction materials, and the area immediately surrounding the externally accessible portion of the tank system as well as the secondary containment system.

For all tank system inspection activities, the inspections and frequencies are given in Table F-2-1, and the inspection log sheets are shown in Attachment F-2. Specific items of the tank system inspections are addressed in the following paragraphs.

Since none of the tanks to be permitted will be underground tanks or underground portions of the aboveground tanks, the regulatory requirements for inspection of the cathodic protection system are not applicable.

The Army hereby requests a variance from any requirements [40 CFR 264.193(b)(4)(i)(2)] to empty the agent holding tank, agent surge tank, spent decontamination holding tanks, and brine surge tanks to allow entry and inspection of the interior to detect corrosion or erosion of the tank sides and bottom. The Army believes that the nondestructive testing methods and detailed inspection procedures described in the following paragraphs will provide sufficient, timely information on the integrity of the tank systems. The Army has expressed concern for the level of safety and the unnecessary risks that may be encountered during vessel entry for internal inspection.

All inspections will be documented. The inspector will complete the Inspection Log Form to indicate the results of the inspection. The inspection logs will be kept on file at the UMCDF.

Tank System External Corrosion and Releases

In addition to the daily inspections, the condition of the tanks will be assessed by nondestructive testing methods, such as ultrasonic wall thickness testing and fiberoptic television camera viewing of tank interior, on a yearly basis to detect corrosion, erosion, cracks, leaks, pitting, or wall thinning to less than sufficient shell thickness. The test methods will be submitted to the Director of Oregon Department of Environmental Quality (ODEQ) for approval prior to use. The results of this testing will be presented in a written report, maintained at the UMCDF in the operating record, and submitted to the Director of ODEQ within 60 calendar days of the performance of the assessment.

The exact test methods will be reviewed in advance to ensure that the procedures to be used will adequately detect corrosion, erosion, cracks, leaks, pitting, or wall thinning to less than sufficient shell strength. The tests will be performed by an established, reliable subcontractor with sufficient experience in these tank testing methods. The results of this assessment will be presented in a written report that will be kept on file at the UMCDF.

Tank System Construction Materials and Surrounding Area

The aboveground portions of the tank systems, including tank shell and bottom, piping and valves, pumps, tank supports, and construction materials, the area around the tank and the secondary containment system will be visually inspected at least once daily to detect corrosion, erosion, or releases of waste. In the Toxic Cubicle or the Spent Decontamination System Room, inspections for the agent holding tank, agent surge tank, and spent decontamination holding tanks, respectively, will be conducted by closed-circuit television cameras. The inspections will be performed, in person, at least once per operating week, when UMCDF personnel enter the Toxic Cubicle and Spent Decontamination System Room for routine operation and maintenance activities. The inspection of other areas of the Munitions Demilitarization Building and the Brine Surge Tank System will be performed in person.

Tank System Overfilling Control Equipment

Overfill controls will be inspected daily when waste is present. The inspection will consist of visual observation of the external overfill controls. An operational check of the mechanical devices, such as level switches and transmitters, will be performed when UMCDF personnel enter the Toxic Cubicle or other respective areas for routine operation and maintenance activities at least once per operating week.

Tank System Monitoring and Leak Detection Equipment

Temperature and pressure will not be measured for chemical agent, spent decontamination solution, or brine. The temperature (except for brine) will be ambient and the pressure will be atmospheric. Data gathered from the leak detection equipment, such as the level indicators in the sumps, will be inspected daily to ensure that the tank system operates according to design specifications.

Sumps, trenches, and external liners will be inspected on a daily basis as a part of the tank systems. The inspection will consist of a visual observation of the sumps, trenches, and external liners, and a check on the operation of the level indicators in the sumps and liners. During chemical agent changeover, or at least on an annual basis, the metal sump will be removed from the concrete liner system for a complete visual inspection of the external liner.

Tank System Cathodic Protection

There will be no cathodic protection systems installed on any of the hazardous waste tank systems at the UMCDF.

Waste Pile Inspection

The UMCDF will have no waste pile units. The requirements of this section are, therefore, not applicable.

Surface Impoundment Inspection

The UMCDF will have no surface impoundments. The requirements of this section are, therefore, not applicable.

Incinerator Inspection

The incinerators and associated equipment will be visually inspected daily for leaks, spills, fugitive emissions, and signs of tampering. Routine daily visual inspections of the incinerators and their associated equipment will be conducted by operations personnel through the use of remote closed-circuit television cameras strategically located in these areas. Use of remote cameras will limit the number of ingress operations into Category A process areas by UMCDF personnel (entry into these areas will require donning complete Demilitarization Protective Ensembles).

When personnel must enter these areas for normal operation and maintenance purposes, routine inspections will be supplemented by the personnel entering the incinerator area and performing a thorough visual inspection of the incinerator and associated equipment. Further information concerning the specifics of the Dunnage Incinerator pollution abatement system can be found in Section D-8 and Attachment D-3. Inspection schedules and inspection procedures can be found in Table F-2-1 and Attachment F-2.

For each incinerator, the automatic waste feed cutoff system and associated alarms will be tested weekly to verify operability. The automatic waste feed cutoffs for the Liquid Incinerators are designated on Table D-5-1, for the Metal Parts Furnace on Table D-6-1, for the Deactivation Furnace System on Table D-7-1, and for the Dunnage Incinerator on Table D-8-1. Positive indications that the waste feed cutoff system and associated alarms are operable will be conducted from the Control Room by manual activation of the cutoff valve and cross-checking the waste feed flow meters. Detailed procedures for testing the waste feed cutoff mechanisms are included in Attachment D-1 for each incinerator system.

The incinerators will be taken offline and a detailed inspection/maintenance operation performed yearly.

The incinerator process monitoring and recording equipment will be calibrated and maintained as designated in Tables D-5-1 and D-5-3 for the Liquid Incinerators; in Tables D-6-1 and D-6-3 for the Metal Parts Furnace; in Tables D-7-1 and D-7-3 for the Deactivation Furnace System; and in Tables D-8-1 and D-8-3 for the Dunnage Incinerator. The equipment listed in these tables will be visually inspected for unusual readings or recorded data that suggest potential malfunctions of the instruments during operation of the incineration systems daily.

Additional incinerator items to be inspected and their frequency are presented in Table F-2-1. A more detailed discussion of incinerator operation is contained in Sections D-5 through D-8.

Landfill Inspection

The UMCDF will have no landfill units. The requirements of this section are, therefore, not applicable.

Land Treatment Facility Inspection

The UMCDF will have no land treatment units. The requirements of this section are, therefore, not applicable.

Miscellaneous Unit Inspection

The Brine Reduction Area evaporator packages, drum dryers, and associated equipment will be inspected on a frequent basis to ensure safe operation and maintenance of the treatment unit.

Each evaporator package will be visually inspected on a daily basis for evidence of corrosion, leakage or other physical damage or proper operation. Inspections include the overfill and spill control equipment, level switches and transmitters, piping and values, skid supports, structure, and pumps. On an annual basis a nondestructive test will be conducted to detect corrosion, erosion, cracks, leaks, pitting, or wall thinning to less than sufficient shell strength.

Each drum dryer will be inspected daily for evidence of corrosion, leakage, or other damage as well as for proper operation. Inspected items for each drum dryer will include overfill and spill control equipment, drum dryer housing, skid support, piping and valves, level switches and transmitters, drum dryer knife blades, end scrapers, conveyors, and drum dryer catch pan.

The secondary containment system will be inspected daily for signs of deterioration, wear and tear, spills, and leaks. Items for inspection will include the general area, sump, sump pump, piping and valves, and level switches and transmitters for proper operation. On an annual basis, the metal sump will be removed for visual inspection of the concrete line.

Routine daily inspections will be conducted visually by operations personnel and inspection results will be documented in Inspection Log Forms. The inspection logs for the evaporator packages, drum dryers, and associated equipment will be kept on file at the UMCDF.

Inspections of the miscellaneous units at the UMCDF, i.e., the Brine Reduction Area evaporator packages and drum dryers, are provided in Table F-2-1 and Attachment F-2.

Inspection for Process Vents

The requirements of this section are not applicable because the UMCDF will not operate any distillation/fractionation, thin film evaporation, or solvent extraction units, and will not conduct air or steam stripping operations.

Inspection Procedures for Equipment Leaks

Applicability and Waste Analysis

The Army has used knowledge of the nature of the hazardous waste streams, the process by which they will be produced, and proposed UMCDF design and operation, to determine, for each piece of equipment, whether the equipment will contain or will contact a hazardous waste with organic concentration that will equal or exceed 10 percent by weight. Liquid chemical agent (which may exist as a heavy liquid or gas/vapor state, meets the criteria of 10 percent or greater organic hazardous constituents. See Tables C-1-9 through C-1-11 for specific composition and percentages of the organics comprising chemical agents GB, VX, and HD. The Army has determined that the following pipes and associated equipment (e.g., pumps and values) will be regulated under 40 CFR 264 Subpart BB:

- The pipes that will carry liquid chemical agent from the Bulk Drain Stations to the agent holding tank and agent surge tank
- The pipes that will carry liquid chemical agent from the Multipurpose Demilitarization Machine to the agent holding tank and agent surge tank
- The pipes that will carry liquid chemical agent from the agent holding tank and agent surge tank to the Liquid Incinerators.
- The manifold piping that will pass vapor from the agent holding tank and agent surge tank to the canister-type carbon filter.

The equipment on the agent holding tank and agent surge tank will also be regulated under this section. Equipment identified as regulated under 40 CFR 264 Subpart BB is provided in Table F-2-2.

There will be no liquid feed lines or pumps and valves associated with any of the other incinerators. Liquid waste feeds to the three spent decontamination holding tanks will contain hazardous wastes with less than 10 percent concentrations of hazardous organic constituents. Each piece of equipment to which the requirements of Subpart BB apply will be marked in a manner to readily distinguish it from other pieces of equipment.

Standards: Pumps in Light Liquid Service

There will not be any pumps in light liquid service at the UMCDF.

Standards: Compressors

There will not be any compressors in service at the UMCDF that will contact chemical agent.

Standards: Pressure Relief Devices in Gas/Vapor Service

The agent holding tank and the agent surge tank will be equipped with a closed-vent system that will lead directly a canister-type carbon filter and then into the negative pressure atmosphere within the Munitions Demilitarization Building. These vapors, along with room air, will pass through the ventilation system carbon filter of the Munitions Demilitarization Building.

Pressure relief devices regulated under this section will include five pressure safety valves on the feed lines to the Liquid Incinerators, one pressure safety valve on the agent holding tank, one pressure safety value on the agent surge tank, one rupture disc on the agent holding tank, one rupture disc on the agent surge tank, and the shutoff valve to the canister-type carbon filter. All of these pressure relief devices will be equipped with a closed-vent system capable of capturing and transporting leakage to the canister-type carbon filter. All of these pressure relief devices will be operated with no detectable emissions, and continually monitored by the Automatic Continuous Air Monitoring System.

Standards: Sampling Connecting Systems

The Liquid Incinerator sampling connection system will be equipped with a closed-purge system. The closed-purge system will return the purged hazardous waste management stream directly to the feed line for the Liquid Incinerators with no detectable emissions to the atmosphere.

Standards: Open-Ended Valves or Lines

Open-ended drains and vents at the UMCDF that contact chemical agent will be equipped with a cap, fluid flange, plug, or second valve. The cap, blind flange, plug, or second valve will seal the opening at all times during operations. If a second valve is used, it will be operated in a manner such that the valve on the hazardous waste stream end will close before the second valve will open.

Standards: Valves in Gas/Vapor Service or in Light Liquid Service

There will not be any valves in light liquid service at the UMCDF because chemical agent is a heavy liquid. However, valves on the manifold piping from the agent holding tank and agent surge tank to the canister-type carbon filter may contain chemical agent in a gas/vapor form and will therefore be subject to this section. In accordance with 40 CFR 264.1057(g), the Army has determined that all valves associated with chemical agent are unsafe to monitor pursuant to the monitoring requirements of 40 CFR 264.1063(b). All valves that will contact or contain chemical agent or vapor will be housed within the Munitions Demilitarization Building and will be continuously monitored by remote monitoring devices (Automatic Continuous Air Monitoring System) for detection of chemical agent releases. In addition, the valves in the manifold piping between the agent holding tank and agent surge tank and the canister-type carbon filter will be visually inspected daily. The Army will use this alternate monitoring plan to eliminate the potential for personnel exposure to the highly toxic waste stream.

Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Flanges and Other Connectors Inspection

Pumps, valves, and pressure relief devices in heavy liquid service are shown in Table F-2-2. All valves, pumps, and pressure relief devices associated with chemical agent will be housed within buildings that will be continuously monitored by remote monitoring devices (Automatic Continuous Air Monitoring System) for detection of chemical agent releases. In addition, pumps and valves associated with chemical agent will be visually inspected for evidence of corrosion and leakage at least once daily.

Standards: Closed-Vent Systems and Control Devices

Control devices regulated under this section will include: 1) the canister-type carbon filter, which will function as a control device for vapor releases from the agent holding tank agent and agent surge tank and 2) the carbon filters in the Munitions Demilitarization Building ventilation filter system into which all vapor releases will be pulled by the negative pressure maintained in the Munitions Demilitarization Building. The ventilation filter system will include nine six-bank carbon filter units. Each six-bank carbon filter unit will have continuous air monitors (Automatic Continuous Air Monitoring System) after the second, third and fourth banks, which will measure the concentration level of chemical agent.

Corrective measures necessary to ensure that the control devices in hazardous service, as defined in this section, will operate in compliance with the requirements of 40 CFR 264.1033(h) and will be implemented immediately. The spent carbon from the carbon filters in the Munitions Demilitarization Building ventilation filter system will be replenished with fresh carbon when chemical agent breakthrough is indicated. The spent carbon from the canister-type carbon filter systems will be replenished monthly.

Alternative Standards for Valves in Gas/Vapor Service or in Light Liquid Service: Percentage of Valve Allowed to Leak

Valves in gas/vapor service will be repaired immediately if leaks occur. The Army will not request alternative standards pursuant to 40 CFR 264.1061.

Alternative Standards for Valves in Gas/Vapor Service or in Light Liquid Service: Skip Period Leak Detection and Repair

Valves in gas/vapor service will be monitored for the minimum required leak detection specifications and repair requirements. Alternative standards will not be requested per 40 CFR 264.1062.

Test Methods and Procedures

The Army will use remote monitoring devices and visual inspection at least once daily in lieu of the test methods and procedures specified in 40 CFR 264.1063(b), as previously discussed. See Attachment F-2 for monitoring procedures.

Remedial Action

Remedial Action - General

If inspections show that non-emergency maintenance is needed, it will be completed as soon as possible to prevent further damage and to reduce the need for subsequent emergency response. If it is found during an inspection (or between inspections) that a hazardous situation is imminent or has already occurred, remedial action measures will be undertaken immediately. A detailed description of remedial action measures and notification procedures for incidents involving hazardous waste release is provided in Sections G-1 and G-4 (Contingency Plan) of this permit application.

Remedial Action for Pumps and Valves

Pumps in Light Liquid Service

There will not be any pumps in light liquid service at the UMCDF.

Valves in Light Liquid Service

There will not be any valves in light liquid service at the UMCDF.

Pressure Relief Devices

Pressure relief devices regulated by this section will be monitored continuously by the Automatic Continuous Air Monitoring System. If a leak is detected, first attempts at repair will be made immediately or no later than five days after the leak is detected. All repairs will be completed within 15 days of leak detection.

Delay of Repair

All repairs will be made on schedule, unless requested per 40 CFR 264.1059.

Inspection Records and Recordkeeping

Inspection Records

Inspection log sheets (as shown in Attachment F-2), including calibration logs (as discussed in Attachment D-1) will be kept at the UMCDF. These will be the written record of the items contained in the inspection schedule. The inspection records will record, at a minimum, the date and time of inspection, inspector's name, a notation of the observation made, and the date and nature of any repairs or other remedial actions. The records will be kept for a minimum of three years from the date of inspection.

Recordkeeping Requirements

The Army will comply with recordkeeping requirements by recording the following information in the UMCDF operating record for each piece of equipment subject to the provisions of 40 CFR 264 Subpart BB: 1) equipment identification number and hazardous waste management unit identification; 2) approximate locations within the UMCDF, (e.g., identify the hazardous waste management unit on a UMCDF plot plan); 3) type of equipment (e.g., a pump or pipeline valve); 4) percent-by-weight total organics in the hazardous waste stream at the equipment; 5) hazardous waste state associated with the equipment (e.g., gas/vapor or liquid);and 6) method of compliance with the standard. This information is summarized in Table F-2-2.

When a leak is detected, the following procedures will be followed as specified in 40 CFR 264.1064(c): 1) a weatherproof and readily-visible identification tag (marked with the equipment identification number, the date evidence of a potential leak was found, and the date the leak was detected) will be attached to the leaking equipment; and 2) the identification tag on equipment, except on a valve, will be removed after it has been repaired.

When a leak is detected, the following information will be recorded in an inspection log and will be kept in the UMCDF operating record: 1) the instrument and operator identification numbers and the equipment identification number; 2) the date evidence of a potential leak was found; 3) the date the leak was detected and the dates of each attempt to repair the leak; 4) repair methods applied in each attempt to repair the leak; 5) "above 10,000" if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 parts per million; 6) the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak; 7) documentation supporting the delay of repair of a valve, in compliance with 40 CFR 264.1059(c); 8) the signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a hazardous waste management unit shutdown; 9) the expected date of successful repair of the leak if a leak cannot be repaired within 15 calendar days; and 10) the date of successful repair of the leak.

The design documentation and the monitoring, operating, and inspection information for each control device required to comply with the provisions of 40 CFR 264.1060 will be recorded and kept up-to-date in the UMCDF operating record, as specified in 40 CFR 264.1035(c). Design documentation is provided in Section D and Attachment D-3 of this permit application. Monitoring, operating, and inspection information is provided in Table F-2-1 and Attachment F-2.

A list of identification numbers for equipment (except welded fittings) subject to the requirements of 40 CFR 264 Subpart BB will be recorded in a log that will be kept in the UMCDF operating record. The following information will be recorded in the UMCDF operating record for valves that comply with 40 CFR 264.1062: 1) a schedule of monitoring; and 2) the percent of valves found leaking during each monitoring period.

Reporting Requirements

In the event of equipment leaks, the Army will submit semi-annual reports to the Director of ODEQ that will provide the information required by 40 CFR 264.1065.

Table F-2-1
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
CONTAINER HANDLING BUILDING		
Munitions and Bulk Items in Onsite Transport Containers or Overpack Containers (for Spray Tanks) Awaiting Transfer to Munitions Demilitarization Building	W	Visually inspect for leaking onsite transport container/ overpack container secured closures; deterioration of onsite transport containers/overpack containers; rust, corrosion, or trends that indicate possible malfunction, such as onsite transport containers/overpack containers out of proper position or alignment; dents, unusual appearance, or signs of tampering.
Onsite Transport Container/ Overpack Container (for Spray Tanks) Condition	A	Conduct nondestructive testing to determine structural integrity.
	W	Monitor onsite transport container/overpack container contents for leakage through chemical agent monitor port.
CONTAINER HANDLING BUILDING (continued)		
Secondary Containment System:		
• General Area	W	Inspect the floor and curbing for cracks, flaking, chips, or gouges and areas that indicate excessive wear or deterioration of protective coating. Inspect roof and walls with regard to structural integrity. Also examine floor for apparent drips, spills, or leaks from the munitions/bulk items in the onsite transport containers/ overpack containers.
• Sump System		
- Sump Structure	D W	Visually inspect construction materials for evidence of corrosion, erosion, leaking seams or fixtures, deterioration of coating.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
- Sump Conditions	A	Remove metal sump for visual inspection of concrete liner.
CONTAINER HANDLING BUILDING (continued) Secondary Containment System (continued):		
• Sump System (continued)		
- Trench Structure	D W	Visually inspect construction materials for evidence of corrosion, erosion, leaking seams or fixtures, or deterioration of coating.
- Trench Conditions	A W	Remove metal sump for visual inspection of concrete liner.
- Piping and Valves	D W	Visually inspect for evidence of corrosion and leakage.
Bridge Crane System	W	Visually inspect for deterioration of hoist, excessive wear, or deterioration of the mechanisms or trends that indicate potential malfunction. Inspect lift area for apparent leaks from munitions/bulk items in onsite transport containers/ overpack containers (for spray tanks).
Lift System	W	Visually inspect for deterioration or excessive wear of the mechanisms, or trends that indicate potential malfunction. Inspect lift area for apparent leaks from munitions/bulk items in onsite transport containers/ overpack containers (for spray tanks).

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
Pneumatic Roller Track Conveyor	W	Visually inspect for deterioration or excessive wear of conveyor or deterioration of mechanisms, or trends that indicate potential malfunction. Inspect areas for apparent drips, spills, or leaks from munitions/ bulk items in onsite transport containers/overpack containers.
UNPACK AREA		
Conveyor Systems	M	Remove and clean chain guard; inspect chain for adequate lubrication; clean around grease fittings and vent fittings as necessary; clean bearing housings; inspect seals for excessive lubricant leakage; reinstall chain guard and inspect for proper alignment.
Airlock	M	Remove airlock side panels as necessary to provide access to conveyor components; remove and clean chain guard; clean chain sprockets of conveyor drive; examine sprocket teeth and chain for wear indicating misalignment between sprockets; realign sprockets if necessary.
ROCKET PROCESSING SYSTEM		
Computerized Automatic Control System Interlocks	D	Run computer scans.
Monorail with Lifting Device System	D	Perform functional check for correct operation.
	M	Inspect bearings and electrical connections.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
Rocket Metering Input Assembly	W	Visually check for vibration and noise. Visually inspect clutch; adjust and tighten, if necessary.
	M	Inspect roller chain; adjust and tighten if necessary; clean and test clutch.
Rotary Metering System	M	Clean accumulated dirt and oil from drive chain and sprockets; check clutch brake for proper operation; check motor, clutch brake, gear box, and drum bearing pillow blocks for excessive temperature; inspect for worn or damaged chain and sprockets; examine for excessive noise, vibration, damage, leakage, and loose parts. Align sprockets and adjust chain tension if needed; lubricate chain if needed.
Blast Valves	W	Check for correct operation; check for hydraulic fluid leaks.
Blast Gates	W	Inspect gate gasket; inspect closure surfaces; manually inspect gate latch assembly for proper operation; manually inspect gate opening and closing mechanism for proper operation; repair and replace components showing signs of corrosion or wear.
Vent Punch	W	Visually inspect punch and drain assembly, hydraulic cylinders, gears, pusher assembly, and puncher; repair or adjust as necessary.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
Rocket Shear Machine/ Burster Size Reduction Machine	W	Inspect shear station bolster rods for adequate lubrication; inspect bolster rod wipers for damage and excessive wear; check shear blade for chips, cracks, wear, and proper alignment; inspect hydraulic valves for leaks, cracks, and loose mountings; inspect all hydraulic hoses, tubes, and cylinders for cracks, looseness, wear, leaks, and dents; examine for excessive noise, vibration, damage, leakage, and loose parts; observe operation of shear head to check alignment of shear head on bolster rods; observe operation of pusher drive roller chain for proper tension; shut down equipment and realign or adjust tension if needed; inspect electrical conduit for cracks, breaks, and loose connections.
Conveyor Systems	M	Remove and clean chain guard; clean around grease fittings and vent fittings as necessary; inspect chain for adequate lubrication; clean bearing housings; inspect seals for excessive lubricant leakage. Reinstall chain guard and inspect for proper alignment.
MINE PROCESSING SYSTEM		
Computerized Automatic Control System Interlocks	D	Run computer scan.
Monorail with Lifting Device System	D	Perform functional check for correct operation.
	M	Inspect bearings and electrical connections.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
MINE PROCESING SYSTEM (continued)		
Conveyor Systems	M	Remove and clean chain guard; clean around grease fittings and vent fittings as necessary. Inspect chain for adequate lubrication; clean bearing housings; inspect seals for excessive lubricant leakage. Reinstall chain guard and inspect for proper alignment.
Glove Box	W	Visually inspect for correct operation. Check gloves for leaks; clean gloves.
Blast Gates	W	Inspect gate gasket; inspect closure surfaces; manually inspect gate latch assembly for proper operation; manually inspect gate opening and closing mechanism for proper operation. Clean closure surfaces, if necessary, to hold tight seal. Repair and replace components showing signs of corrosion or wear.
Blast Valves	W	Check for correct operation; check for hydraulic fluid leaks.
Mine Machine	W	Visually inspect conveyor, hydraulic cylinders, accumulator; check orientation station.
	M	Lubricate conveyor parts.
Mine Orientation Station	W	Clean and visually inspect punch and drain assembly.
Burster Punch Station	W	Clean and visually inspect punch and drain assembly.
PROJECTILE PROCESSING SYSTEMS		
Computerized Automatic Control System Interlocks	D	Run computer scan.
Monorail with Lifting Device System	D	Perform functional check for correct operation.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
PROJECTILE PROCESSING SYSTEMS (continued)		
	M	Inspect bearings and electrical connections.
Projectile Metering System	M	Visually check for vibration and noise; visually inspect clutch. Inspect roller chain. Adjust and tighten if necessary; clean and test clutch.
Rotary Metering System	M	Check clutch brake for proper operation; check motor, clutch brake, gear box, and drum bearing billow blocks for excessive temperature; inspect for worn or damaged chain and sprockets; examine for excessive noise, vibrations, damage, leakage, and loose parts. Align sprockets and adjust chain tension if needed. Lubricate chain if needed.
Conveyor Systems	M	Inspect chain for adequate lubrication; remove and clean chain guard; clean around grease fittings and vent fittings as necessary; clean bearing housings; inspect seals for excessive lubricant leakage. Reinstall chain guard and inspect for proper alignment.
Blast Gates	W	Inspect gate gasket; replace gate gasket if it cannot hold a tight seal. Inspect closure surfaces; clean closure surfaces if necessary to hold tight seal. Manually inspect gate latch assembly for proper operation; manually inspect gate opening and closing mechanism for proper operation. Repair and replace components showing signs of corrosion or wear.
Blast Valves	W	Check for correct operation; check for hydraulic fluid leaks.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
PROJECTILE PROCESSING SYSTEMS (continued)		
Projectile/Mortar Disassembly Machines	D	Inspect miscellaneous parts, conveyor, and surrounding area for explosive or simulant--remove buildup, if found; inspect Burster Removal Station pressure differential head assembly slide bearings for excessive wear, replace if necessary; inspect Burster Removal Station pressure differential head ring seals for damage or excessive wear, replace if necessary; wipe grit from bolster rods with clean cloth.
Multiposition Loader	W	Inspect timing belt for excessive wear or fraying, replace if necessary; inspect pneumatic system to verify no air leakage; inspect bolts, clamps, nuts, and screws for looseness, tighten as necessary. Verify emergency stop pressure switch setting at 70±5 pounds per square inch.
Lift Station	D	Visually inspect and test for correct operation.
Pick and Place Unit	D	Visually inspect and test for correct operation.
BULK ITEM (TON CONTAINERS, BOMBS, AND SPRAY TANKS) PROCESSING SYSTEM		
Computerized Automatic Control System Interlocks	D	Run computer scan.
Monorail with Lifting Device System	D	Perform functional check for correct operation.
	M	Inspect bearings and electrical connections.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
BULK ITEM (TON CONTAINERS, BOMBS, AND SPRAY TANKS) PROCESSING SYSTEM (continued)		
Conveyor Systems	M	Remove and clean chain guard; clean around grease fittings and vent fittings as necessary; inspect chain for adequate lubrication; clean bearing housings; inspect seals for excessive lubricant leakage. Reinstall chain guard and inspect for proper alignment.
Bulk Drain Station	D	Check hydraulic supply pressure gauge.
Bulk Drain Station	W	Inspect punch for chipping or damage, replace if necessary; inspect drain probe for bending or damage to spring tip, replace if necessary; inspect bolts, clamps, nuts, and screws for looseness, tighten as necessary; inspect all sensor mountings to assure mounting brackets are secure, adjust and tighten as necessary; check gear reducer unit oil condition and level, replace or refill as necessary; check for excessive vibration or unusual noises during operation, repair as necessary.
Lift Station	D	Visually inspect and test for correct operation.
DUNNAGE INCINERATOR		
Combustion System (Exterior)	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
Flame Safeguard Ultraviolet Sensors	D	Check for proper voltage output at local control panel (>0 mV).

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
DUNNAGE INCINERATOR (continued)		
High Temperature Safety Shutdown and Temperature Controls	D	Observe temperature readouts in Control Room: Primary chamber = 1,800°F Afterburner = 2,000°F ±150°F
Primary Combustion Chamber	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
Ash Discharge and Collection	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
Waste Feed Cutoff Mechanisms	W	Test control circuit and document waste feed cutoff.
Combustion Air Blowers	W	Visually inspect for loss of lubrication, check for vibration, and inspect bearings for overheating.
Incinerator Hardware, Such as Pumps, Valves, Pipes, Pipe Fittings, etc.	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
DEACTIVATION FURNACE SYSTEM		
Combustion System (Exterior)	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
Flame Safeguard Ultraviolet Sensors	D	Check for proper voltage output at local control panel (>0 mV).
High Temperature Safety Shutdown and Temperature Controls	D	Observe temperature readouts in Control Room: Rotary retort = 1,000°F-1,800°F Afterburner = 2,000°F ±150°F (2,200°F when processing rockets)

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
DEACTIVATION FURNACE SYSTEM (continued)		
Ash Collection and Containers	D	Visually[b] inspect for leaks, spills, fugitive emissions, and containers out of place.
Combustion Air Blowers	W	Visually[b] inspect for loss of lubrication, check for vibration, and inspect bearings for overheating.
Rotary Retort Drive	W	Visually[b] inspect accessible areas for loss of lubrication, check for vibration, inspect bearings for overheating, inspect shaft and gears for signs of binding.
Heated Discharge Conveyor	D	Visually[b] inspect accessible areas for loss of lubrication, check for vibration, inspect bearings for signs of overheating, inspect conveyor belt for physical integrity and alignment, inspect shafts and gears for signs of binding.
Waste Feed Cutoff Mechanisms	W	Test control circuits and document waste feed cutoff.
Incinerator Hardware, Such as Pumps, Valves, Pipes, Pipe Fittings, etc.	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
Blast Gates	W	Inspect door gaskets; inspect closure surfaces; manually inspect door opening and closing mechanism for proper operation; repair and replace components showing signs of corrosion or wear.
Blast Valves	W	Check for correct operation; check for hydraulic fluid leaks.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
LIQUID INCINERATORS (LIC-FURN-101/201 AND LIC-FURN-102/102)		
Combustion System (Exterior)	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
Flame Safeguard Ultraviolet Sensors	D	Check for proper voltage output at local control panel (>0 mV).
High Temperature Safety Shutdown and Temperature Controls	D	Observe temperature readouts in Control Room: Primary chamber = 2,700°F ±150°F Secondary chamber = 2,000°F ±150°F
Waste Feed Cutoff Mechanisms	W	Test control circuits and document waste feed cutoff.
Combustion Air Blowers	W	Visually[b] inspect for loss of lubrication, check for vibration, inspect bearings for overheating.
Primary Chamber Burner Block Atomizing Nozzle	D	Visually[b] observe pressure of atomizing air and pressure of liquid chemical agent line in Control Room. Check that the low pressure switches show closed contacts.
Secondary Chamber Spent Decontamination Solution Atomizing Nozzle	D	Visually[b] observe pressure of atomizing air and pressure of liquid spent decontamination solution in Control Room. Check that the low-pressure switches show closed contacts.
Incinerator Hardware, Such as Pumps, Valves, Pipes, Pipe Fittings, etc.	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
METAL PARTS FURNACE		
Combustion System (Exterior)	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
Flame Safeguard Ultraviolet Sensors	D	Check for proper voltage output at local control panel (>0 mV).
High Temperature Safety Shutdown and Temperature Controls	D	Observe temperature readouts in Control Room: Burnout chamber exhaust = 1,600°F (1,400°F for ton containers and mine drums) Afterburner = 2,000°F ±150°F
Burnout Chamber	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
Waste Feed Cutoff Mechanisms	W	Test control circuit and document waste feed cutoff.
Combustion Air Blower	W	Visually[b] inspect for loss of lubrication, check for vibration, inspect bearings for overheating.
Incinerator Hardware, Such as Pumps, Valves, Pipes, Pipe Fittings, etc.	D	Visually[b] inspect for leaks, spills, fugitive emissions, and signs of tampering.
DUNNAGE INCINERATOR POLLUTION ABATEMENT SYSTEM		
Quench Pump	D	Visually inspect for leakage, check for excessive noise and vibration, inspect for overheating.
Exhaust Blower	D	Visually inspect for loss of lubrication, check for vibration, inspect bearings for overheating.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
DUNNAGE INCINERATOR POLLUTION ABATEMENT SYSTEM (continued)		
Pollution Abatement System	D	Visually inspect for leaks, spills, fugitive emissions, and signs of tampering.
Stack Monitors	D	Check calibration.
Stack	D	Observe opacity.
Quench Tower	W	Visually inspect shell for corrosion.
Emergency Exhaust Blower	W	Visually inspect for necessary maintenance.
Baghouse:		
• Baghouse Bags	W	Visually check for integrity of bags.
• Thermocouple on Gas Stream to Baghouse	D (When operating with hazardous waste feed to the Dunnage Incinerator)	Visually observe calibration of thermocouple.
• Pressure Drop Across Baghouse	D (When operating with hazardous waste feed to the Dunnage Incinerator)	Visually observe calibration of differential pressure devices.
• Pressure Drop Access Collector	D	Visually observe calibration of differential pressure devices; drain accumulated moisture from the accumulator and from the air compressor.
• Pulse Timer	D	Inspect for proper operation.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
Baghouse (continued):		
• Cleaning Air Pressure	D	Check that pressure is at 80-100 pounds per square inch or 40-60 pounds per square inch for fiberglass bags.
• Rotary Valve	D	Visually inspect for dust discharge in normal fashion; check oil level in gear box.
• Screw Conveyor	D	Visually inspect for dust discharge in normal fashion; check oil level in gear box.
• Rotating Equipment	D	Visually inspect equipment and drives for signs of wear, broken parts, and leakage. Make repairs as required.
• Exhaust	D	Visually inspect for clear dust.
• Clean Air Plenum	W	Visually inspect for signs of dust or moisture.
• Air Compressor	W	Inspect oil level.
• Ductwork	W	Inspect for obstructions or dust buildup.
• Collector Flange Joints	A	Inspect for leaks. Tighten and re-gasket or caulk as required.
• Structural Steel Connections	A	Inspect for tightness of bolts and reweld as necessary.
• Mechanical Equipment	A	Inspect for rust or corrosion; clean and repaint as necessary.
• Support Steel	A	Inspect for rust or corrosion; clean and repaint as necessary.
• Collector	A	Inspect for rust or corrosion; clean and repaint as necessary.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
DUNNAGE INCINERATOR POLLUTION ABATEMENT SYSTEM (continued)		
Carbon Filter System:		
• General System	W	Visually inspect for evidence of corrosion, malfunctions, leaks, or excessive wear.
• Pressure Gauges	D	Check for pressure drop.
• Air Flow	D	Check that monitor is reading in appropriate range.
• Monitor	D	Visually inspect for evidence of corrosion and physical integrity.
	W	Check for correct calibration.
• Instrumentation	W	Check for correct calibration of pressure and airflow instrumentation.
• Damper	A	Check elastomeric seals and bearings for excessive wear.
• Carbon Filters	Every 18 months[c]	Perform leak testing.
POLLUTION ABATEMENT SYSTEMS FOR DEACTIVATION FURNACE SYSTEM, LIQUID INCINERATORS, AND METAL PARTS FURNACE		
Exhaust Blower	D	Visually inspect for loss of lubrication, check for vibration, inspect bearings for overheating.
Venturi Plug Valve	D	Check to assure that valve freely operates.
Pollution Abatement System	D	Visually inspect for leaks, spills, fugitive emissions, and signs of tampering.
Stack	D	Observe opacity.
Stack Monitors	D	Check calibration.
Scrubber Tower	W	Visually inspect shell for corrosion.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
POLLUTION ABATEMENT SYSTEMS FOR DEACTIVATION FURNACE SYSTEM, LIQUID INCINERATORS, AND METAL PARTS FURNACE (continued)		
Quench Tower	W	Visually inspect shell for corrosion.
Demister Vessel	W	Visually inspect shell for corrosion.
Emergency Exhaust Blower (MPF and DFS only)	W	Visually inspect for necessary maintenance.
Thermocouple on Gas Stream Entering Venturi Scrubber	D	Visually observe calibration of thermocouple.
Pressure Drop Across Venturi Scrubber	D	Visually inspect calibration of differential pressure devices.
Carbon Filter System:		
• General System	W	Visually inspect for evidence of corrosion, malfunctions, leaks, or excessive wear.
• Pressure Gauges	D	Check for pressure drop.
• Air Flow	D	Check that monitor is reading in appropriate range.
• Monitor	D	Visually inspect for evidence of corrosion and physical integrity.
	W	Check for correct calibration.
• Instrumentation	W	Check for correct calibration of pressure and airflow instrumentation.
• Damper	A	Check elastomeric seals and bearings of excessive wear.
• Carbon Filters	Every 18 months[c]	Perform leak testing.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
POLLUTION ABATEMENT SYSTEM FOR BRINE REDUCTION AREA		
Ductwork that Connects Evaporators and Drum Dryers to the Baghouses	M	Visually inspect for presence of liquid or salt buildup.
Exhaust Blower	D	Visually inspect for loss of lubrication; check for vibration; inspect bearing for overheating.
Stack	D	Observe opacity.
Stack Monitors	D	Visually observe calibration.
Dryer Knockout Box	D	Inspect manway cover, knife gate, and flashing for salt residue buildup. Inspect discharge container for the presence of hazardous waste label and ensure label is dated and that the label date does not exceed 90 days. Inspect transfer hose for cracks or tears. Inspect outside of container and area around container for salt residue.
Ductwork	M	Visually inspect for presence of liquids and salt buildup.
Baghouses:		
• Baghouse Bags	W	Visually inspect for integrity of bags.
• Thermocouple on Gas Stream to Baghouse	D	Visually observe calibration of thermocouple.
• Pressure Drop Across Baghouse	D (When in Operation)	Visually observe pressure reading. Check calibration of differential pressure devices.
• Pressure Drop Across Collector	D	Visually observe calibration of differential pressure devices; drain accumulated moisture from the accumulator and from the air compressor.
• Pulse Timer	D	Inspect for proper operation.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
POLLUTION ABATEMENT SYSTEM FOR BRINE REDUCTION AREA (continued)		
Baghouse (continued)		
• Cleaning Air Pressure	D	Check that pressure is at 80-100 pounds per square inch or 40-60 pounds per square inch for fiberglass bags.
• Rotary Valve	D	Visually inspect for dust discharge in normal fashion; check oil level in gear box.
• Screw Conveyor	D	Visually inspect for dust discharge in normal fashion; check oil level in gear box.
• Rotating Equipment	D	Visually inspect equipment and drives for signs of wear, broken parts, and leakage.
• Exhaust	D	Visually inspect for clear dust.
• Clean Air Plenum	D	Visually inspect for signs of dust or moisture.
• Air Compressor	D	Inspect oil level.
• Ductwork	W	Inspect for obstructions or dust buildup.
• Collector Flange Joints	A	Inspect for leaks.
• Structural Steel Connections	A	Inspect for tightness of bolts.
• Mechanical Equipment	A	Inspect for rust or corrosion.
• Support Steel	A	Inspect for rust or corrosion.
• Collector	A	Inspect for rust or corrosion.
• Baghouse Pad Sump	D	Presence of liquids.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
AGENT HOLDING TANK AND AGENT SURGE TANK: ACS-TANK-101 AND ACS-TANK-102		
Overfill/Spill Control Equipment	D	Visually[d] inspect for evidence of corrosion, leakage, or other physical damage.
Level Switches and Transmitters	D	Check transmitters for proper operation at control panel.
Tank Structure	D	Visually[d] inspect for evidence of corrosion, erosion, and leaking seams or fixtures.
Tank Area	D	Visually[d] inspect for evidence of leakage on floor.
Piping and Valves	D	Visually[d] inspect for evidence of corrosion and leakage.
Pump	D	Visually[d] inspect glands and connections for evidence of leakage; with pump operating, check for excessive noise and vibration.
Tank Supports	D	Visually[d] inspect for evidence of corrosion.
Tank Conditions	A	Conduct nondestructive testing to detect corrosion, erosion, cracks, leaks, pitting, or wall thinning to less than sufficient shell strength.
Canister-Type Carbon Filter	D	Visually[d] inspect for corrosion, leakage, or other physical damage. Replace carbon filter as necessary.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
AGENT HOLDING TANK AND AGENT SURGE TANK (ACS-TANK 101 AND ACS-TANK 102) SECONDARY CONTAINMENT SYSTEM		
General Area	D	Visually[d] inspect the floor and curbing for cracks, flaking, chips, or gouges, and areas that indicate excessive wear or deterioration of protective coating. Also examine floor and sump area for apparent drips, spills, or leaks.
Sump System No. MDB-SUMP-134:		
• Sump Structure	D	Visually[d] inspect construction materials for evidence of corrosion, erosion, leaking seams or fixtures, or deterioration of coating.
• Sump Conditions	A	Remove metal sump for visual inspection of concrete liner.
• Piping and Valves	D	Visually[d] inspect for evidence of corrosion and leakage.
• Sump Pump	D	Visually[d] inspect glands and connections for evidence of leakage; with pump operating, check for excessive noise and vibration.
• Level Switches and Transmitters	D	Check transmitters for proper operation at control panel.
SPENT DECONTAMINATION HOLDING TANKS: SDS-TANK-101, SDS-TANK-102, AND SDS-TANK-103		
Overfill/Spill Control	D	Visually[e] inspect for evidence of corrosion, leakage, or other physical damage.
Level Switches and Transmitters	D	Check transmitters for proper operation at control panel.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
SPENT DECONTAMINATION HOLDING TANKS: SDS-TANK-101, SDS-TANK-102, AND SDS-TANK-103 (continued)		
Tank Structure	D	Visually[e] inspect for evidence of corrosion, erosion, leaking seams or fixtures.
Tank Area	D	Visually[e] inspect for evidence of leakage on floor.
Piping and Valves	D	Visually[e] inspect for evidence of corrosion and leakage.
Pump	D	Visually[e] inspect glands and connections for evidence of leakage. With pump operating, check for excessive noise and vibration
Tank Supports	D	Visually[d] inspect for evidence of corrosion.
Tank Conditions	A	Conduct nondestructive testing to detect corrosion, erosion, cracks, leaks, pitting, or wall thinning to less than sufficient shell strength.
General Area	D	Inspect the floor and curbing for cracks, flaking, chips, gouges, or areas that indicate excessive wear or deterioration of protective coating. Also examine floor and sump area for apparent drips, spills, or leaks.
Sump System No. MDB-SUMP-135:		
• Sump Structure	D	Visually[e] inspect construction materials for evidence of corrosion, erosion, leaking seams or fixtures, or deterioration of coating.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
SPENT DECONTAMINATION HOLDING TANKS: SDS-TANK-101, SDS-TANK-102, AND SDS-TANK-103 (continued)		
Sump System No. MDB-SUMP-135 (continued):		
• Sump Conditions	A	Remove metal sump for visual inspection of concrete liner.
• Piping and Valves	D	Visually[e] inspect for evidence of corrosion or leakage.
• Sump Pump	D	Visually[e] inspect glands and connections for evidence of leakage. With pump operating, check for excessive noise and vibration.
• Level Switches and Transmitters	D	Check transmitters for proper operation at control panel.
BRINE SURGE TANKS: BRA-TANK-101, BRA-TANK-102, BRA-TANK-201, AND BRA-TANK-202		
Overfill/Spill Control Equipment	D	Visually inspect for evidence of corrosion, leakage, or other physical damage.
Level Switches and Transmitters	D	Check transmitters for proper operation.
Tank Structure	D	Visually inspect for evidence of corrosion, erosion, or leaking seams or fixtures.
Tank Area	D	Visually inspect for evidence of leakage on floor of diked area.
Piping and Valves	D	Visually inspect for evidence of corrosion and leakage.
Pump	D	Visually inspect glands and connections for evidence of leakage; with pump operating, check for excessive noise and vibration.
Tank Supports	D	Visually inspect for evidence of corrosion.
Tank Conditions	A	Conduct nondestructive testing to detect corrosion, erosion, cracks, leaks, pitting, or wall thinning to less than sufficient shell strength.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
BRINE SURGE TANKS (BRA-TANK-101, BRA-TANK-102, BRA-TANK-201, AND BRA-TANK-202) SECONDARY CONTAINMENT SYSTEM		
General Area	D	Inspect the floor and curbing for cracks, flaking, chips, or gouges, and areas that indicate excessive wear or deterioration of protective coating. Also examine floor and sump area for apparent drips, spills or leaks.
Sump System No. BRA-SUMP-101:		
• Sump Structure	D	Visually inspect construction materials for evidence of corrosion, erosion, leaking seams or fixtures, or deterioration of coating.
• Sump Conditions	A	Remove metal sump for visual inspection of concrete liner.
• Piping and Valves	D	Visually inspect for evidence of corrosion and leakage.
• Sump Pump	D	Visually inspect glands and connections for evidence of leakage. With pump operating, check for excessive noise and vibration.
• Level Switches and Transmitters	D	Check transmitters for proper operation at control panel.
EMERGENCY GENERATOR		
Engine/Generator	M	Visually inspect for loose drive belts, oil leaks, coolant leaks, lube oil level, mechanical integrity, oil leaks, and crankcase containment.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
EMERGENCY GENERATOR (continued)		
	M	Start unit with Uninterruptible Power Supply battery power; check governor speed, voltage output regularity, noise level, filter differential pressure, overspeed safety trip, low oil pressure protective device, high water temperature instruments, electrical output, phase balance, and fuel oil and lube oil pump pressures.
COMMUNICATION		
		Inspect equipment for proper operation of:
Radio (Demilitarization Protective Ensemble)	W	Audibility
Radio (Security)	W	Audibility
Telephones	W	Audibility
		Inspect equipment for proper operation of:
Public Address System	W	Audibility
Closed Circuit Television Cameras	W	Visual clarity/tilt, pan, and zoom function
SECURITY		
Gates	D	Operate sallyport vehicle and personnel gate interlock override to assure capability for emergency ingress/egress.
Locks	D	Check locks on unused gates and all buildings.
Fences	D	Check for integrity, intrusion or obstruction by vegetation, and gaps at fence base.
Lighting	D	Check for proper functioning, masking of lighted areas by vegetation.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
SECURITY (continued)		
Warning Signs	D	Check for missing signs, proper appearance, and signs of tampering.
PROTECTIVE CLOTHING		
Demilitarization Protective Ensembles:		
• Demilitarization Protective Ensemble Respirator, Radio Sets, Outer Gloves, and Boots	D	Visually inspect equipment to ensure they were tagged for reuse; ensure a quantity of 10 Demilitarization Protective Ensemble outergarments on hand for Demilitarization Protective Ensemble operations; ensure emergency air bottles stored in Demilitarization Protective Ensemble Support Area are filled.
• Outergarment	D	Check tag on garment in Demilitarization Protective Ensemble Support Area to ensure they were inspected after removal from manufacturer's package; inspect garments to ensure they have been properly hung and aired out; ensure quantity of 10 Demilitarization Protective Ensemble outergarments on hand for Demilitarization Protective Ensemble operation.
• Life Support System Air	D	Check remote valves to air manifold to ensure air can be turned on.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
PROTECTIVE CLOTHING (continued)		
• Self-Contained Breathing Apparatus	Each Use as required by Occupational Safety and Health Administration regulations	Perform user function tests and inspection prior to donning.
		Check pressure gauge to assure that the tank is full.
		Check straps and base for wear or cracks.
		Open air valve.
		Breathe with facepiece to ensure that the air is available.
	W	Perform inspection per manufacturer's recommendation [29 CFR 1910.134(f)(ii) requires monthly inspection].
		Replace tank after hydrostatic testing as needed.
• Demilitarization Protective Ensemble Leak Detector	D	Inspect operators log to ensure that daily check is made on helium tester.
Toxicological Agent Protective Clothing:	D	Visually inspect clothing to ensure it has been tagged for use.
• Protective Mask	D	Check log or tag to ensure mask has new canister and filter.
AUTOMATIC CONTROL SYSTEM		
Control Room Alarm Panels	D	Check integrity of audible/visual alarm.
FIRE PROTECTION SYSTEM		
Alarms (Fire)	W	Check for operability.
Extinguishers (Manual)	M	Check for condition and gauge pressure.
Fire Extinguishing Medium for Control Room	M	Check for pressure.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
FIRE PROTECTION SYSTEM (continued)		
Smoke Detectors	M	Check for proper operation.
Dry Chemical Fire Protection System in Toxic Cubicle	M	Check for proper operation.
Sprinkler System	A	Inspect in accordance with fire codes and regulations.
TRANSPORTATION VEHICLES USED FOR ONSITE TRANSPORT OF HAZARDOUS WASTE		
Engine Fluid Levels (Oil, Coolant, Brake Fluid, and Hydraulic Fluid)	D (when in use)	Low fluid levels.
Other Items (Safety Lights, Gauges, Horn, Backup Horn, Brakes, Steering, Fire Extinguisher)	D (when in use)	Check for operability and signs of needed maintenance.
EMERGENCY TRANSPORT		
Emergency Vehicle	W	Parked at proper location; started and runs properly; gas tank more than one-half full.
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING)		
Laundry, Personnel Change Rooms, and Demilitarization Protective Ensemble Support Area:	M	Sufficient inventory, expiration dates have not lapsed (where applicable).
• Impermeable Toxic Agent Suit w/Hood (6)		
• M-9, M-17 or M-40 Mask (6)		

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
Laundry, Personnel Change Rooms, and Demilitarization Protective Ensemble Support Area (continued):		
• M11 Canister		
• Rubber Aprons (6)		
• Rubber Gloves (12 pair)		
• Rubber Boots (12 pair)		
• Stretchers (2)		
• Round Point Shovel (5)		
• Corn Broom (5)		
• Rake (5)		
• Brush, with Handle (5)		
• 3-Gallon Bucket (5)		
• 55-Gallon Drum (5)		
Laundry, Personnel Change Rooms, and Demilitarization Protective Ensemble Support Area (continued):		
• Bags of Impregnated Underclothing (12)		
• Butyl Rubber Overboots (6 pair)		
• Hammer (1)		
• Screwdriver (1)		
• Duct Tape (12 rolls)		

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
• Emergency Response Team Truck (at Laundry) (1)		
• Absorbent Pads/Bales, Bags, Rags, etc.		
• Truck-Mounted Power-Driven Decontamination Apparatus (1)		
Laundry, Personnel Change Rooms, and Demilitarization Protective Ensemble Support Area (continued):		
• One-Ton Container Capping Kit (Valves, Plugs, etc.) (1)		
• Individual Decontamination and Reimpregnating Kit (1)		
• Rubber Hoods (6)		
• Case of M-9, M-17, or M-40 Canisters (1)		
• Utility Wipes, Box (1)		
• Spray Disinfectant (2)		
• Plastic Bags, Box (2)		
• Rubber Goods Hamper (1)		
• Detector Kits (6)		

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
Laundry, Personnel Change Rooms, and Demilitarization Protective Ensemble Support Area (continued):		
• Chemical Agent Antidote Kits (2)		
• Radio Transmitter (1)		
• Personnel Decontamination Station (1)		
• Decontaminating Apparatus, Power-Driven ABC-M11 (4)		
• Gloves, Canvas/Leather (2 pair)		
• First Aid Packet (1)		
• Compass		
• Canteen (1)		
• Poncho (1)		
Laundry, Personnel Change Rooms, and Demilitarization Protective Ensemble Support Area (continued):		
• Flashlight (1)		
• Tape, Textile, White (1)		
• Chemical Hazard Signs (1)		
• Antiset, DS2 (1)		
• Notebook Paper (1)		

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
Emergency Equipment Area:		
Rubber Goods (For Protection Against Liquid)	W	Sufficient inventory for each item listed and expiration dates have not lapsed (where applicable).
• Rubber Suits (6)		
• Rubber Aprons (6)		
Emergency Equipment Area (continued):		
• Rubber Boots (Assorted Sizes 12 pairs)		
• Rubber Hoods (6)		
• Rubber Gloves (12 pairs)		
• Rubber Overboots (6 pairs)		
• Impregnated Clothing (Assorted Sizes, 12 Bags)		
• M-9 Masks (Assorted Size, 6)		
• M-9 Mask Canisters (1 Case)		
• Coveralls, Explosive Handlers (Assorted Sizes, 12)		
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
Miscellaneous Items:	W	Sufficient inventory for each item listed and expiration dates have not lapsed (where applicable).
• Utility Wipes (2 Boxes)		

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
• Spray Disinfectant (2 Cans) • Duct Tape (12 Rolls) • Plastic Bags (2 Boxes) • Hamper for Used Rubber Goods (1) • Detector Kits (6) • Shovel, Round Point (5) • Broom, Corn (5) • Rake (5) • Brush, w/Handle (5) Miscellaneous Items (continued): • Bucket, 3 Gallon (5) • Drum, 55 Gallon, Open Top (5) • Hammer (1) • Screwdriver (1) • Absorbent Pads/Bales, Bags, Rags • One-Ton Container Capping Kit (1)		
Demilitarization Protective Ensemble Support Area Locker Rooms:	W	Sufficient inventory for each item listed and expiration dates have not lapsed (where applicable).

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
• Towels (12) • Shower Boots (12 pair) • Coveralls (Assorted Sizes, 12) Demilitarization Protective Ensemble Support Area Locker Rooms (continued): • Undershirt and Shirts (Assorted Sizes, 12 sets) • Cotton Demilitarization Protective Ensemble Undergarments (12)		
Chemical Agent Antidote Kits: • Unpack Area (1) • Second Floor Observation Hall (1) • Demilitarization Protective Ensemble Support Area Main Room (1) • Toxic Maintenance Area (1) • First Floor Observation Hall (1)	W	Kit in place and properly stocked.
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
Chemical Agent Antidote Kits (continued): • Emergency Equipment Area (1)		

Item	Frequency[a]	Types of Problems
• Control Room Entry (1)		

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
Stretchers:	W	In place and in good condition.
• Unpack Area (1)		
• Emergency Equipment Area (1)		
• Demilitarization Protective Ensemble Support Area (1)		
• Control Room Entry (1)		
• Mechanical Equipment Room (1)		
Demilitarization Protective Ensemble Support Area Butyl Rubber Storage:	W	Sufficient inventory for each item listed and expiration dates have not lapsed (where applicable).
• Butyl Suit, Toxicological Agent Protective (12)		
• Butyl Hood, Toxicological Agent Protective (12)		
• Butyl Gloves, Toxicological Agent Protective (12 pair)		
• Butyl Overboots, Toxicological Agent Protective (12 pair)		
• Butyl Safety Toe Boots, Toxicological Agent Protective (12 pair)		
• Butyl Apron, Toxicological Agent Protective Undergarments (12 sets)		

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
EMERGENCY EQUIPMENT STORAGE STATIONS (PERSONNEL AND MAINTENANCE BUILDING AND MUNITIONS DEMILITARIZATION BUILDING) (continued)		
Demilitarization Protective Ensemble Support Area Butyl Rubber Storage (continued):		
• Chemical Protective Liners, Impregnated, with Socks (12)		
• Mask, Chemical Agent (12)		
SPILL CONTROL VEHICLE	W	Parked at proper location; started and runs properly; gas tank more than one-half full; decontamination solution; has sufficient inventory of items listed.
Shovels (5)		
Picks (5)		
3-gallon Buckets (3)		
Rakes (5)		
Absorbent Pads/Bales Bags, Rags, etc.		
Duct Tape (12 Rolls)		
SPILL CONTROL VEHICLE (continued)		
Plastic Bags (6 Boxes)		
55-Gallon Drums (5)		
Hammer (1)		
Screwdriver (1)		
Socket Wrench Set (1)		
Brushes, with Handle (5)		

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
SPILL CONTROL VEHICLE (continued)		
Brooms (5)		
POWER-DRIVEN DECONTAMINATION APPARATUS	W	Parked at proper location; starts and runs properly; gas tank more than one-half full; decontaminant properly stored.
MUNITIONS DEMILITARIZATION BUILDING VENTILATION		
General Ventilation System	D	Visually inspect for evidence of corrosion, malfunctions, leaks, or excessive wear.
Pressure Gauges	D	Check for pressure drop.
Air Flow	D	Check that monitor is reading in appropriate range.
MUNITIONS DEMILITARIZATION BUILDING VENTILATION (continued)		
Internal Mechanical	When filters are changed	Visually inspect for evidence of corrosion, excessive wear; inspect for loss of lubrication and bearing overheating.
Monitor	D	Visually inspect for evidence of corrosion, and physical integrity.
Monitor Calibration	W	Check for correct calibration.
Carbon Filter System	D	Chemical agent breakthrough as indicated by monitors; replace with fresh carbon as needed.
LABORATORY VENTILATION SYSTEM		
General Ventilation System	D	Visually inspect for evidence of corrosion, malfunctions, leaks, or excessive wear.
Pressure Gauges	D	Check for pressure drop.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
LABORATORY VENTILATION SYSTEM (continued)		
Air Flow	D	Check that monitor is reading in appropriate range.
Internal Mechanical	When filters are changed	Visually inspect for evidence of corrosion, excessive wear; inspect for loss of lubrication and bearing overheating.
Monitor	D	Visually inspect for evidence of corrosion and physical integrity.
Monitor Calibration	W	Check for correct calibration.
BRINE FEED PUMPS		
Brine Feed Pumps	D	Visually inspect glands and connections for evidence of leakage; with pump operating, check for excessive noise and vibration.
Brine Reduction Area Strainers	D (During operation)	Visually inspect differential pressure gauge to see if differential pressure is greater than manufacturer's recommended value.
BRINE REDUCTION AREA DRUM DRYERS: BRA-DDYR-101, BRA-DDYR-102, AND BRA-DDYR-201		
Overfill/Spill Control Equipment	D	Visually inspect for evidence of corrosion, leakage, or other physical damage.
Level Switches and Transmitters	D	Check transmitters for proper operation.
Drum Dryer Housing	D	Visually inspect for evidence of corrosion, erosion, and leaking seams or fixtures.
Drum Dryer Area	D	Visually inspect for evidence of corrosion leakage on floor.
Piping and Valves	D	Visually inspect for evidence of corrosion and leakage.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
BRINE REDUCTION AREA DRUM DRYERS: BRA-DDYR-101, BRA-DDYR-102, AND BRA-DDYR-201 (continued)		
Skid Supports	D	Visually inspect for evidence of corrosion.
Drum Dryer Conditions	D	Inspect for corrosion, cracks, wear, or other damage.
Drum Dryer Drip Oil Feeders	D	Check operation, oil level, drip rate, and cleanliness; check that all lines are receiving oil.
Drum Dryer Knife Blades	D (Prior to startup)	Visually inspect for appearance of a heel.
Endscrapers	D	Check that endscrapers are keeping drum ends clean.
Endboards	D	Check condition, damage.
Conveyors	D (During operation)	Check condition of wiper blades for conveyors; check that conveyor belts are free of brine salt buildup.
Drum Dryer Catch Pans	D (During operation and always as part of shutdown)	Visually inspect for accumulated liquids and condition of pans.
BRINE REDUCTION AREA EVAPORATOR PACKAGES: BRA-EVAP-101, BRA-EVAP-102, BRA-EVAP-201, BRA-EXCH-101, BRA-EXCH-102, AND BRA-EXCH-201		
Overfill/Spill Control Equipment	D	Visually inspect for evidence of corrosion, leakage, or other physical damage.
Level Switches and Transmitters	D	Check transmitters for proper operation.
Evaporator/Heat Exchanger Structure	D	Visually inspect for evidence of corrosion, erosion, and leaking seams or fixtures.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
BRINE REDUCTION AREA EVAPORATOR PACKAGES: BRA-EVAP-101, BRA-EVAP-102, BRA-EVAP-201, BRA-EXCH-101, BRA-EXCH-102, AND BRA-EXCH-201 (continued)		
Evaporator/Heat Exchanger	D	Visually inspect for evidence of corrosion, erosion, and leaking seams or fixtures.
Piping and Valves	D	Visually inspect for evidence of corrosion and leakage.
Circulation Pumps and Desuperheater Pumps	D	Visually inspect glands and connections for evidence of leakage; with pump operating, check for excessive noise and vibration.
Skid Supports	D	Visually inspect for evidence of corrosion.
Evaporator/Heat Exchanger Conditions	A	Conduct nondestructive testing to detect corrosion, erosion, cracks, leaks, pitting, or wall thinning to less than sufficient shell strength.
BRINE REDUCTION AREA DRUM DRYERS AND BRINE EVAPORATOR PACKAGES (BRA-DRYR-101, BRA-DRYR-102, BRA-DRYR-201, BRA-EVAP-101, BRA-EVAP-102, BRA-EVAP-201,BRA-EXCH-101, BRA-EXCH-102, AND BRA-EXCH-201) SECONDARY CONTAINMENT SYSTEM)		
General Area	D	Inspect the floor and curbing for cracks, flaking, chips, or gouges, and areas that indicate excessive wear or deterioration of protective coating. Also examine floor and sump area for apparent drips, spills, or leaks.
Sump System		
• Sump Structure	D	Visually inspect construction materials for evidence of corrosion, erosion, leaking seams or fixtures, or deterioration of coating.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
BRINE REDUCTION AREA DRUM DRYERS AND BRINE EVAPORATOR PACKAGES (BRA-DRYR-101, BRA-DRYR-102, BRA-DRYR-201, BRA-EVAP-101, BRA-EVAP-102, BRA-EVAP-201,BRA-EXCH-101, BRA-EXCH-102, AND BRA-EXCH-201) SECONDARY CONTAINMENT SYSTEM (continued)		
• Sump Conditions	A	Remove metal sump for visual inspection of concrete liner.
• Piping and Valves	D	Visually inspect for evidence of corrosion and leakage.
• Sump Pump	D	Visually inspect glands and connections for evidence of leakage. With pump operating, check for excessive noise and vibration.
• Level Switches and Transmitters	D	Check transmitters for proper operation of control panel.
BRINE TRANSFER LINE		
Piping and Associated Equipment	D	Visually inspect for evidence of corrosion, leakage, or other physical damage.
Pipe Supports	D	Visually inspect for evidence of corrosion, leakage, or other physical damage.
Pipe Area	D	Visually inspect for evidence of leakage.
LOADING/UNLOADING AREAS		
Container Handling Building	D	Visually inspect for leaks, spills, and fugitive emissions.
Unpack Area Conveyors	D	Visually[f] inspect conveyors for physical integrity and slippage of belts or gears.
Deactivation Furnace System Ash Bin	D	Visually inspect for leaks, spills, and fugitive emissions.
Dunnage Incinerator Ash Bin	D	Visually inspect for leaks, spills, and fugitive emissions.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
LOADING/UNLOADING AREAS (continued)		
Deactivation Furnace System Cyclone Ash Bin	D	Visually inspect for leaks, spills, and fugitive emissions.
Dunnage Incinerator Baghouse Ash Bin	D	Visually inspect for leaks, spills, and fugitive emissions.
Brine Salt Loading Areas-- Brine Reduction Area	D	Visually inspect for leaks, spills, and fugitive emissions.
DEMISTERS		
Nozzles	D	Visually inspect pressure gauge in water lines supplying the nozzles (pressure must be >30 pounds per square inch gauge and <120 pounds per square inch gauge).
CHEMICAL AGENT MONITORS		
Chemical Agent Monitors	D	Visually inspect monitors for physical integrity. Check diagnostic indicators on front panel of monitor housing for proper operation. Perform agent challenge test and calibration.
Automatic Continuous Air Monitoring System (Area Monitoring):		
• Quick Disconnect	D	Visually inspect if present. (Not required in Level C areas.)
• Sample Line	D	Visually inspect if connected to sample port; inspect if heat trace is functional.
• Unused Sample Lines	D	Visually inspect if capped.
• Sampling Pump Exhaust	D	Inspect for proper ventilation.
• Chart Recorder	D	Inspect for range set at 10 volts and in record mode.
• Power Supply	D	Inspect to ensure supply meets or exceeds monitoring plan.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
CHEMICAL AGENT MONITORS (continued)		
Automatic Continuous Air Monitoring System (Area Monitoring) (continued):		
• Sample Flow	D	Inspect set point to ensure ±20 percent of the manufacturer's recommended set point.
Depot Area Air Monitoring System (Perimeter Monitoring/Ambient Air System Monitoring):		
• Tubes	D	Visually inspect if present.
• Quick Disconnect	D	Visually inspect if present.
• Sample Line	D	Visually check if connected to sampling port; inspect if heat trace is functional.
• Unused Sample Lines	D	Visually check if lines are capped.
• Sampling Pump Exhaust	D	Inspect for proper ventilation.
• Power Supply	D	Inspect to ensure supply meets or exceeds monitoring plan.
METEOROLOGICAL STATIONS		
Meteorological Stations	D	Visually inspect station for physical integrity; check diagnostic indicators on front panel at each monitor for proper operation.
UNINTERRUPTIBLE POWER SUPPLY		
Invertor Input Voltage	W	Check meter for proper voltage.
Invertor Input Current	W	Check meter for proper current.
Battery Current	W	Check meter for proper reading.
Alternating Current Voltage	W	Check meter for proper voltage.
Frequency	W	Check meter for proper frequency.
Uninterruptible Power Supply Output Current	W	Check meter for proper current.
Primary Input Current	W	Check meter for proper current.
Primary Input Voltage	W	Check meter for proper voltage.

Table F-2-1 (continued)
INSPECTION SCHEDULE

Item	Frequency[a]	Types of Problems
MUNITIONS DEMILITARIZATION BUILDING PROCESS SUMPS		
Overfill/Spill Control Equipment	D	Visually[b,d] inspect for evidence of corrosion, leakage, or other physical damage.
Level Switches and Transmitters	D	Check transmitters for proper operation at control panel.
Sump Structure	D	Visually[b,d] inspect construction materials for evidence of corrosion, erosion, and leaking seams or fixtures.
Sump Area	D	Visually[b,d] inspect for evidence of leakage.
Piping and Valves	D	Visually[b,d] inspect for evidence of corrosion and leakage.
Sump Pump	D	Visually[b,d] inspect glands and connections for evidence of leakage; with pump operating, check for excessive noise and vibration.
Secondary Containment System	D	Visually[b,d] inspect for presence of liquid or evidence of cracks or other physical damage.
Sump Conditions	A	Remove metal sump for visual inspection of concrete liner.

NOTES:

[a] D-daily; W-weekly; M-monthly; S-semiannually; A-annually.

[b] Normal visual observation by operators will be conducted by remote closed circuit television camera(s) located in the incinerator area. Cameras will be equipped with pan/tilt, zoom, and wide-angle features to allow thorough viewing of the area within the field of vision. Visual inspections will be conducted at least once per operating week when personnel enter the area for routine operation and maintenance activities.

[c] In-place testing of the carbon filters will be performed at a minimum of once every 18 months. In addition, leak testing will be performed when initially installed and after a replacement of any carbon filter. When testing after filter replacement, only those banks of carbon filters that received the new filter will be tested.

[d] Normal, visual observation by operators will be conducted by remote closed circuit television cameras that will be located in the Toxic Cubicle. Cameras will be equipped with pan/tilt, zoom, and wide-angle features to allow thorough viewing of the area within the field of vision. Visual inspections will be conducted at least once per operating week when personnel enter the area for routine operation and maintenance activities.

[e] Normal visual observation by operators will be conducted by remote closed circuit television cameras located in the Spent Decontamination System Room. Cameras are equipped with pan/tilt, zoom, and wide-angle features allow thorough viewing of the area within the field of vision. Visual inspections are conducted at least once per operating week when personnel enter the area for routine operation and maintenance activities.

[f] Normal visual observation will be conducted by remote closed circuit television cameras that will be located in the Unpack Area. Cameras will be equipped with pan/tilt, zoom, and wide-angle features to allow thorough viewing of the area within the field of vision. Visual inspections will be conducted at least once per operating week when personnel enter the area for routine operation and maintenance activities.

Table F-2-2
EQUIPMENT REGULATED UNDER 40 CFR SUBPART BB

Hazardous Waste Management Unit (P&ID number)	Location at UMCDF	Type of Equipment	Equipment Identification Number	Percent by Weight Total Organics[a]	Hazardous Waste State	Method of Compliance[b]
Transfers liquid chemical agent from ACS-TANK-103 to agent holding tank or agent surge tank (UM-1-D-501)	Explosive Containment Room in the MDB	Pump	ACS-PUMP-109	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Control valves	XV-53	>10	Heavy liquid	same
	same	Ball valves (4)	V-6, V-7, V-8, V-9	>10	Heavy liquid	same
	same	Hose connection assembly (2)	SP-130(2)	>10	Heavy liquid	same
	same	Flexible hose assembly (2)	SP-159(2)	>10	Heavy liquid	same
	Munitions Corridor in the MDB	Control valve	XV-43	>10	Heavy liquid	same
Transfers liquid chemical agent from ACS-TANK-104 to agent holding tank or agent surge tank (UM-1-D-502)	Room 03-211 of the Explosive Containment Room in the MDB	Pump	ACS-PUMP-108	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Control valve	XV-59	>10	Heavy liquid	same
	same	Ball valves (4)	V-16, V-17, V-18, V-19	>10	Heavy liquid	same
	same	Hose connection assembly (2)	SP-130(2), SP-159(2)	>10	Heavy liquid	same

Table F-2-2
EQUIPMENT REGULATED UNDER 40 CFR SUBPART BB

Hazardous Waste Management Unit (P&ID number)	Location at UMCDF	Type of Equipment	Equipment Identification Number	Percent by Weight Total Organics[a]	Hazardous Waste State	Method of Compliance[b]
	same	Flexible hose assembly (2)	SP-159(2)	>10	Heavy liquid	same
	Munitions Corridor in the MDB	Control valve	XV-46	>10	Heavy liquid	same
Transfers liquid chemical agent from the Bulk Drain Stations to the agent holding tank (UM-1-D-514)	Munitions Processing Bay of the MDB	Check valves (3)	V-24, V-25, V-24 after pump	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Ball valves (3)	V-21, V-22, V-23	>10	Heavy liquid	same
	same	Control valves (3)	HV-123, HV-124, FV-20	>10	Heavy liquid	same
	same	Hose connection assembly (2)	SP-130(2)	>10	Heavy liquid	same
	same	Flexible hose assembly (2)	SP-159(2)	>10	Heavy liquid	same
	same	Pump	ACS-PUMP-115	>10	Heavy liquid	same
	same	Instrumentation connections (seals)	PIT-39, PSLL-19, PSL-19, PDIT-67, PSH-20	>10	Heavy liquid	same
(UM-1-D-515)	Munitions Processing Bay of the MDB	Check valves (3)	V-27, V-28, V-44	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Control valves (3)	HV-127, HV-128, FV-120	>10	Heavy liquid	same

Table F-2-2
EQUIPMENT REGULATED UNDER 40 CFR SUBPART BB

Hazardous Waste Management Unit (P&ID number)	Location at UMCDF	Type of Equipment	Equipment Identification Number	Percent by Weight Total Organics[a]	Hazardous Waste State	Method of Compliance[b]
	same	Hose connection assembly (2)	SP-130(2)	>10	Heavy liquid	same
	same	Flexible hose assembly (2)	SP-159(2)	>10	Heavy liquid	same
	same	Ball valves (2)	V-26, V-102	>10	Heavy liquid	same
	same	Instrumentation connections (seals)	PIT-58, PSLL-14, PSL-14, PDIT-66, PSH-120	>10	Heavy liquid	same
(UM-1-D-521)	same	Pump	ACS-PUMP-114	>10	Heavy liquid	same
Transfer liquid chemical agent from ACS-TANK-105 to agent holding tank or agent surge tank (UM-1-D-521)	Munitions Processing Bay of the MDB	Ball valves (4)	V-54, V-55, V-56, V-57	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Ball valves (3)	V-41, V-42, V-43	>10	Heavy liquid	same
	same	Check valve	V-59	>10	Heavy liquid	same
	same	Control valve	XV-75	>10	Heavy liquid	same
	same	Hose connections (2)	SP-130(2)	>10	Heavy liquid	same
	same	Flexible hose assembly (2)	SP-159(2)	>10	Heavy liquid	same
	same	Pump	ACS-PUMP-111	>10	Heavy liquid	same

Table F-2-2
EQUIPMENT REGULATED UNDER 40 CFR SUBPART BB

Hazardous Waste Management Unit (P&ID number)	Location at UMCDF	Type of Equipment	Equipment Identification Number	Percent by Weight Total Organics[a]	Hazardous Waste State	Method of Compliance[b]
Transfers liquid chemical agent from ACS-TANK-106 to agent holding tank or agent surge tank (UM-1-D-521)	Munitions Processing Bay of the MDB	Ball valves (4)	V-74, V-75, V-76, V-77	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Check valve	V-79	>10	Heavy liquid	same
	same	Control valve	XV-85	>10	Heavy liquid	same
	same	Hose connection asssembly (2)	SP-130(2)	>10	Heavy liquid	same
	same	Flexible hose assembly (2)	SP-159(2)	>10	Heavy liquid	same
	same	Pump	ACS-PUMP-112	>10	Heavy liquid	same
Transfers liquid chemical agent from ACS-TANK-107 to agent holding tank or agent surge tank (UM-1-D-521)	Munition Processing Bay of the MDB	Ball valves (4)	V-94, V-95, V-96, V-97	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Check valve	V-99	>10	Heavy liquid	same
	same	Control valve	XV-95	>10	Heavy liquid	same
	same	Hose connection assembly (2)	SP-130(2)	>10	Heavy liquid	same

Table F-2-2
EQUIPMENT REGULATED UNDER 40 CFR SUBPART BB

Hazardous Waste Management Unit (P&ID number)	Location at UMCDF	Type of Equipment	Equipment Identification Number	Percent by Weight Total Organics[a]	Hazardous Waste State	Method of Compliance[b]
	same	Flexible hose assembly (2)	SP-159(2)	>10	Heavy liquid	same
	same	Pump	ACS-PUMP-113	>10	Heavy liquid	same
Transfers liquid chemical agent from ACS-TANK-103, ACS-TANK-104, ACS-TANK-105, ACS-TANK-106, and ACS-TANK-107 to the agent holding tank or agent surge tank (UM-1-D-536)	Toxic Cubicle of the MDB	Ball valves (2)	V-78, V-98	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Check valves (4)	V-76, V-96, V-77, V-97	>10	Heavy liquid	same
	same	Control valves (6)	SP-143(2), LV-84, LV-86, SP-142(2)	>10	Heavy liquid	same
Equipment on agent holding tank, ACS-TANK-101 (UM-1-D-536)	Toxic Cubicle of the MDB	Ball valves (3)	V-87, V-85, V-86 (blind)	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Pressure safety valve	PSV-161	>10	Vapor	same
	same	Rupture disc	PSE-162	>10	Vapor	same
	same	Instrumentation connections (seals)	LIT-93	>10	Heavy liquid	same

Table F-2-2
EQUIPMENT REGULATED UNDER 40 CFR SUBPART BB

Hazardous Waste Management Unit (P&ID number)	Location at UMCDF	Type of Equipment	Equipment Identification Number	Percent by Weight Total Organics[a]	Hazardous Waste State	Method of Compliance[b]
Equipment on agent surge tank, ACS-TANK-102 (UM-1-D-536)	Toxic Cubicle of the MDB	Ball valves (3)	V-107, V-105, V-106 (blind)	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Pressure safety valve	PSV-160	>10	Vapor	same
	same	Rupture disc	PSE-159	>10	Vapor	same
	same	Instrumentation connections (seals)	LIT-109	>10	Heavy liquid	same
Transfers chemical agent vapor from agent holding tank and agent surge tank to canister-type carbon filter (UM-1-D-536)	Toxic Cubicle of the MDB	Blinded gate valves (2)	V-121, V-123	>10	Vapor	ACAMS and visual inspection by closed circuit television
	same	Control valve	HV-775	>10	Vapor	same
	same	Carbon filter	SP-218	>10	Vapor	same

Table F-2-2
EQUIPMENT REGULATED UNDER 40 CFR SUBPART BB

Hazardous Waste Management Unit (P&ID number)	Location at UMCDF	Type of Equipment	Equipment Identification Number	Percent by Weight Total Organics[a]	Hazardous Waste State	Method of Compliance[b]
Transfers liquid chemical agent from agent holding tank or agent surge tank to Liquid Incinerators (UM-1-D-536)	Toxic Cubicle of the MDB	Ball valves (26)	V-81, V-84, V-79, V-82, V-83, V-80, V-101, V-104, V-99, V-102, V-103, V-100, V-95, V-94, V-88, V-89, V-119, V-120, V-117, V-116, V-70, V-108, V-118, V-109, V-114, V-113	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Check valves (5)	V-93, V-90, V-115, V-110, V-112	>10	Heavy liquid	same
	same	Plug valves (2)	V-125, V-127	>10	Heavy liquid	same
	same	Control valves (4)	LV-97, LV-105, XV-737, XV-736	>10	Heavy liquid	same
	same	Hose connection assembly (2)	SP-130(2)	>10	Heavy liquid	same
	same	Pressure safety valves (5)	PSV-738, PCV-735, PSV-103, PSV-102, PCV-43	>10	Heavy liquid	same
	same	Pumps (3)	ACS-PUMP-201, ACS-PUMP-102, ACS-PUMP-101	>10	Heavy liquid	same

Table F-2-2
EQUIPMENT REGULATED UNDER 40 CFR SUBPART BB

Hazardous Waste Management Unit (P&ID number)	Location at UMCDF	Type of Equipment	Equipment Identification Number	Percent by Weight Total Organics[a]	Hazardous Waste State	Method of Compliance[b]
	same	Sampling connection system	ACS-AASS-101	>10	Heavy liquid	same
	same	Instrumentation connections (seals)	PDIT-99, PDIT-104, PI-739, PI-101, PI-742, PI-43, PI-118	>10	Heavy liquid	same
(UM-1-D-546)	Liquid Incinerator Room	Ball valves (5)	V-70, V-71, V-73, V-74, V-72	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Control valves (4)	FV-731, XV-761A, XV-761B, XV-204	>10	Heavy liquid	same
	same	Flexible hose	Has no equipment number (see UM-1-D-546)	>10	Heavy liquid	same
	same	Instrumentation connections (seals)	PIT-732, PSLLL-733, PI-760, PSLL-760	>10	Heavy liquid	same
(UM-1-D-526)	Liquid Incinerator Room	Ball valves (5)	V-20, V-21, V-22, V-23, V-24	>10	Heavy liquid	ACAMS and visual inspection by closed circuit television
	same	Control valves (3)	FV-127, XV-134A, XV-134B	>10	Heavy liquid	same

Table F-2-2
EQUIPMENT REGULATED UNDER 40 CFR SUBPART BB

Hazardous Waste Management Unit (P&ID number)	Location at UMCDF	Type of Equipment	Equipment Identification Number	Percent by Weight Total Organics[a]	Hazardous Waste State	Method of Compliance[b]
	same	Flexible hose	Has no equipment number (see UM-1-D-526)	>10	Heavy liquid	same
	same	Instumentation connections (seals)	PIT-119, PSLL-112, PI-112, PSLL-112	>10	Heavy liquid	same

NOTES:
[a] Specific composition and percentages of the organics comprising the chemical agents GB, VX, and mustard wastes are provided in Table C-1-9 thru C-1-11 of this permit application.
[b] Automatic Continuous Air Monitoring System will provide continuous monitoring.
ACAMS = Automatic Continuous Air Monitoring System
MDB = Munitions Demilitarization Building
P&ID = Piping & Instrumentation Diagram

ATTACHMENT 4

CONTINGENCY PROCEDURES FOR MUNITION DRAINAGE

Contingency Procedure Steps to Process Ton Containers with >5% Heel

1. Configure the Primary Chamber burners as follows:
   a. One burner firing in each zones 1,2, and 3.
   b. Temperature setpoint for each zones 1,2, and 3 will be between 900 °F and 1000 °F.
   c. The combustion air valves to the remaining primary chamber burners will be closed.

2. Operate the afterburner in accordance with the normal operating conditions specified in the SOP (2000 °F +/- 150 °F).

3. Put the zone 2 water quench flow control valves in manual with a CV of 0.

4. Put the zone 3 conveyor in manual.

5. Manually transfer the ton container tray assembly from the charge airlock into zone 2.

6. Place the zone 2 conveyor in the oscillate mode.

7. If the temperature in zone 2 increases to 1400 °F, open the upper water flow control valves. If the temperature increases to 1450 °F, open the lower water flow control valves.

NOTE: The purpose of this is to ensure the vaporization rate does not become excessive.

8. Continue to modulate the zone 2 water quench flow control valves until the zone 2 temperature cools to 1100 °F, then close the water flow control valves.

9. When the zone 2 temperature stabilizes at 1100 °F +/- 100 °F, with the water flow control valves closed, and the oxygen concentration in the crossover duct is at least 12%, wait 90 minutes.

NOTE: If during this procedure, a burner(s) in the primary chamber should lose flame and lockout, the purge for relight can be bypassed as long as one of the burners in the primary chamber remains lit. See step 18 for further specifics.

10. Relight the furnace IAW-normal processing. Specifically, three burners lit in zone 1, two burners in zone 2, and two burners lit in zone 3.

11. Open the combustion air valves to the unlit primary chamber burners. Specifically, one burner in zone 1, and two burners in zone 2.

12. Ramp the temperature in the primary chamber zones to 1450 °F +/-150 °F.

13. Place the zone 2 water flow control valves in automatic.

14. Once the primary chamber reaches 1450 °F +/-150 °F, wait 50 minutes.

15. Transfer the ton container assembly into zone 3, oscillate and sparge the ton containers for 40 minutes.

16. Transfer the ton container assembly into the discharge airlock.

17. Observe the ACAMS (minimum of two cycles) and the SO_2, hydrocarbon, and HCl monitor readings, pull a DAAMS sample and have the lab analyze. If readings are unacceptable, transfer the ton container back into zone 3 for additional heat treatment as per the existing MPF procedures.

18. The post purge, pre-purge, and the flame scanner interlock requirements will be waived for relighting a fuel oil burner provided that at least one flame scanner in an adjoining zone remains energized i.e. (sees the flame) and the temperature of the affected zone remains above 900 °F

Environmental Quality Commission

☐ Rule Adoption Item
☐ Action Item
☒ Information Item

Agenda Item E
April 11, 1996 EQC Meeting

Title:

Portland-Area Ozone Maintenance Plan - Informational Report

Summary:

The Portland area has violated the national ambient air quality standard for ground level ozone since monitoring began in the early 1970s. Levels have been as high as 50 percent over the federal standard which was designed to protect public health and welfare. As a result of these violations, the Portland area was designated nonattainment for ozone on March 3, 1978 under the 1977 Clean Air Act Amendments. The Portland area has attained compliance with the federal standard for ground-level ozone. However, rapid population and traffic growth will result in future violations unless additional control measures are implemented. DEQ has developed an ozone maintenance plan through an extensive public process over a four year period. The proposed plan includes emission reduction strategies affecting all major categories of ozone producing substances, and generally represents the most cost-effective approaches of possible alternatives. The plan provides for maintenance of the ozone standard for ten years, and will allow EPA to redesignate the Portland area to an attainment area for ozone. The maintenance plan and redesignation will assure that public health is protected, will remove Clean Air Act impediments to industrial growth, and will shield the Portland area from Clean Air Act sanctions on federal transportation funds.

Department Recommendation:

It is recommended that the Commission accept this report, discuss the matter, and provide advice and guidance to the Department as appropriate.

David Collier For
Andy Ginsburg
Report Author

Gregory A. Green
Division Administrator

Director

Accommodations for disabilities are available upon request by contacting the Public Affairs Office at (503)229-5317(voice)/(503)229-6993(TDD).

State of Oregon
Department of Environmental Quality Memorandum

Date: March 19, 1996

To: Environmental Quality Commission

From: Langdon Marsh, Director

Subject: Agenda Item E, April 11, 1996 EQC Meeting
Portland-Area Ozone Maintenance Plan - Informational Report

STATEMENT OF PURPOSE

The purpose of this report is to provide the Commission with an overview of the Portland Area Ozone Maintenance Plan, including background on the plan development, key proposed strategy elements, and alternatives considered. Adoption of the Ozone Maintenance Plan and supporting rules is scheduled for the July 12, 1996 EQC meeting.

BACKGROUND

What is Ozone

Ground level ozone, also known as smog, is an air pollutant formed in the atmosphere by a chemical reaction of volatile organic compounds (VOC) and oxides of nitrogen (NO_x). This reaction is most intense on hot summer days with poor ventilation. Ozone is a strong respiratory system irritant that impairs athletic performance, aggravates respiratory illnesses and can cause permanent respiratory system damage. Ozone can be especially harmful to older people and children, and can damage crops and other materials. In the past, motor vehicles and industrial operations have been the major sources of ozone precursors, but other sources such as household products, paints and lawn mowers are fast becoming major contributors due to rapid population growth.

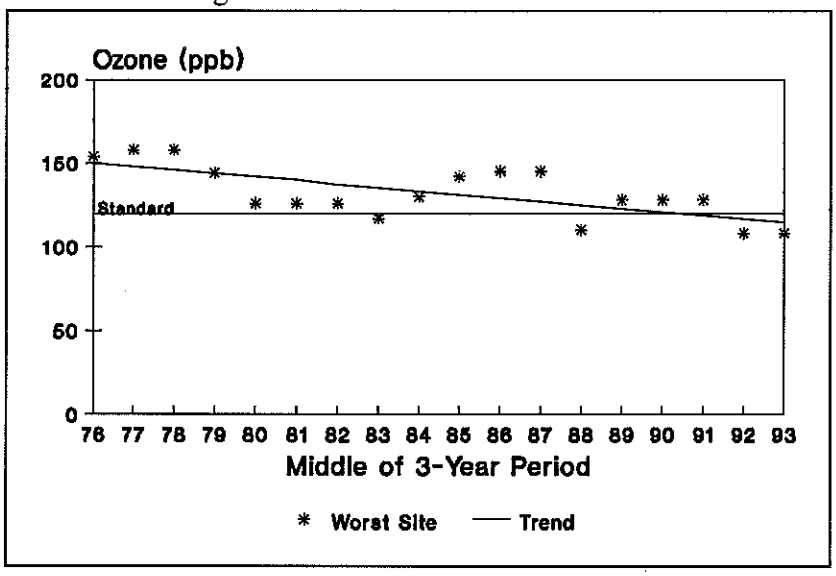
Past Ozone Problem

The Portland area has violated the national ambient air quality standard for ground level ozone since monitoring began in the early 1970s. Levels have been as high as 50 percent over the federal standard which was designed to protect public health and welfare. As a result of these violations, the Portland area was designated nonattainment for ozone on March 3, 1978 under the 1977 Clean Air Act Amendments.

Success in Controlling Ozone

Although there have been year-to-year fluctuations due to weather cycles, Figure 1 shows that ozone levels have generally declined. This improvement in air quality resulted from federal and state emission control strategies implemented since the mid 1970s.

Figure 1: Portland Area Ozone Trend



The attainment strategies focused primarily on:

- Motor vehicles
  - federal new car emission standards
  - DEQ vehicle inspection program
  - Tri-Met transit improvements

- Gasoline
  - reduction in volatility
  - control of refueling vapors at service stations

- Industry
  - Reasonably Available Control Technology (RACT) requirements for a variety of existing industry
  - costly Lowest Achievable Emission Rate (LAER) technology and emission offsets for major new and modified industry.

These strategies brought the Portland area into attainment with the national ambient ozone standard by the federal Clean Air Act deadline of November 15, 1993.

NEED FOR MAINTENANCE PLAN

Projections of Future Ozone Levels

DEQ projections indicate that the Portland area will once again exceed the federal standard within the next few years because of unprecedented population growth. Metro expects more than 300,000 new residents in the next ten years. During the same time, employment will increase by nearly 250,000 workers and driving in the area will increase by over 4.8 million miles per day. Without early implementation of new emission reduction measures, emission increases from this population growth and related driving would likely cause violations of the ozone standard to recur.

Figures 2 and 3 show projected future ozone precursor emissions. These figures indicate that a 19.0 percent reduction in VOC and 10.3 percent reduction in NO_x emissions is needed from new control strategies in order to keep the area in attainment over the next ten years.

Figure 2

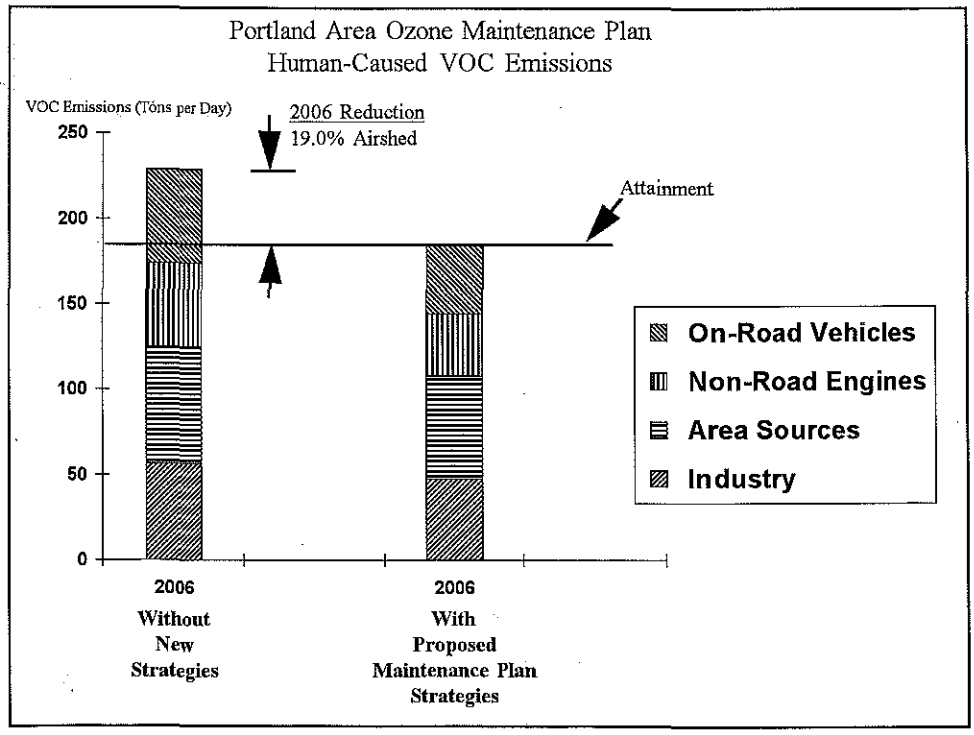
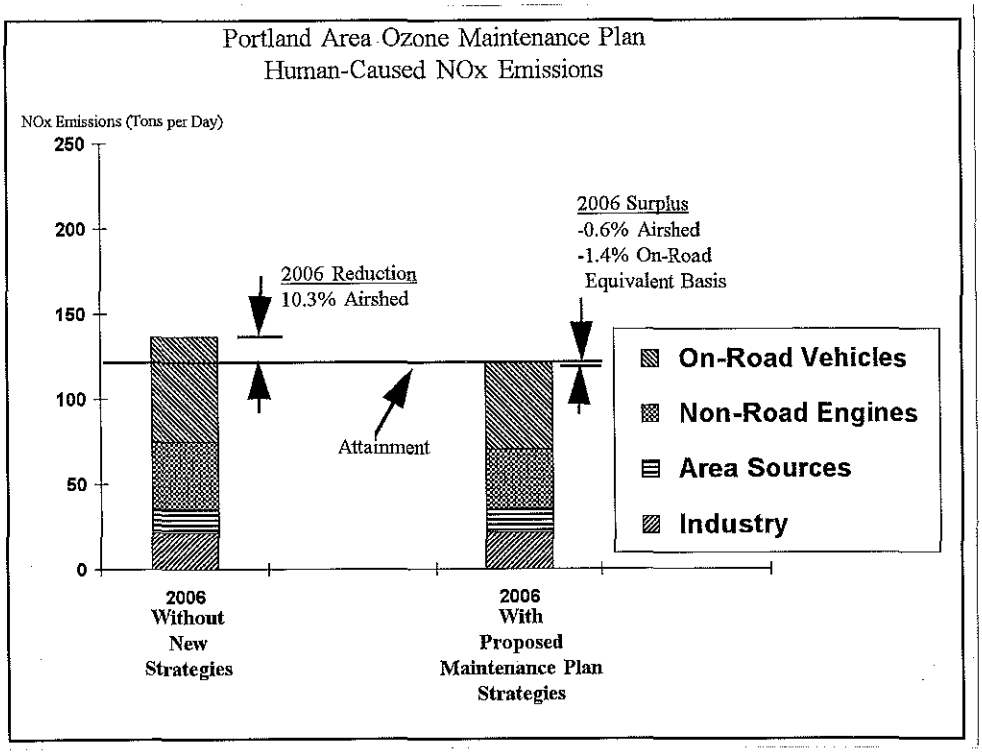


Figure 3



Benefits of Maintenance Plan

To redesignate the Portland area from nonattainment to attainment, the Environmental Protection Agency (EPA) requires an enforceable plan that demonstrates how the area will continue to meet the ozone standard for a minimum of ten years. An EPA-approved ozone maintenance plan and redesignation to attainment will:

- Assure that Public Health will be protected from adverse impacts of ozone;
- Remove industrial growth impediments (LAER and Offsets);
- Protect against Clean Air Act sanctions on Federal Transportation funds;
- Avoid federally-imposed prescriptive and more costly control strategies, such as retrofit NO_x controls on existing industries.

MAINTENANCE PLAN DEVELOPMENT PROCESS

An extensive public process covering a four year period was used to develop the Portland area Ozone Maintenance Plan. This process included the following steps:

- 1992 - Governor's Task Force recommended strategies to include in the Maintenance Plan;
- 1993 - The Oregon Legislature adopted House Bill 2214, which endorsed most of the recommendations of the Governor's Task Force but made some changes to the plan;
- 1994 - Several DEQ Advisory Committees were appointed and recommended specific details of Maintenance Plan strategies;
- 1995 - The Legislature passed a bill that would change some Maintenance Plan strategies, but the Governor vetoed the bill;
- December 1995 - DEQ proposed to revise some strategies to address concerns of the Legislature and Advisory Committees;
- February 1996 - Metro made recommendations on transportation elements of the plan;
- May 1996 - A final public comment/hearing process is scheduled; and
- July 1996 - The Environmental Quality Commission (EQC) is scheduled to take final action on the plan.

Significant changes have been made to the maintenance plan through this process.

- A motor vehicle emission fee recommended by the Governor's Task Force was not adopted by the 1993 Legislature. To make up the lost emission reduction credit, the Legislature increased the stringency of the Employee Commute Options (ECO) program and added a maximum parking ratio program to limit the amount of parking spaces constructed at new non-residential development.

- The Governor's Task force recommended that DEQ adopt California standards for new lawn and garden gasoline engines. However, EPA adopted emission standards for new Lawn and Garden equipment and other non-road engines in 1994/1995, making state rules unnecessary.

- EPA delayed adoption of rules for various non-industrial (area) sources. The EQC adopted rules for paints and household products in 1995 due to a need for early emission reductions.

- Due to concerns expressed by the Legislature, advisory committees and businesses, DEQ proposes to reduce the stringency of ECO, change the parking ratio program to a voluntary program, and modify the vehicle inspection boundary expansion.

- To meet EPA requirements designed to ensure that increases in industrial emissions do not jeopardize maintenance of the ozone standard, a program has been added to manage the use of currently unused permitted industrial emissions.
-

MAINTENANCE PLAN SUMMARY

The maintenance plan strategies include federal, state and local emission control programs. All four major source categories of ozone precursors (i.e. on-road vehicles, non-road engines such as lawn and garden equipment, area sources such as paints and household products, and industry) are affected by these strategies. Selected strategies generally represent the most cost-effective approaches of possible alternatives. Several of the strategies provide benefits beyond emission reductions such as traffic congestion reduction, energy savings and overall cost-savings for the transportation system. The plan accounts for expected weather fluctuations that affect ozone, but provides no surplus VOC emission reduction (there is a small NOx surplus). Figures 4 and 5 show emission reductions expected from strategy elements for the four major source categories.

Figure 4

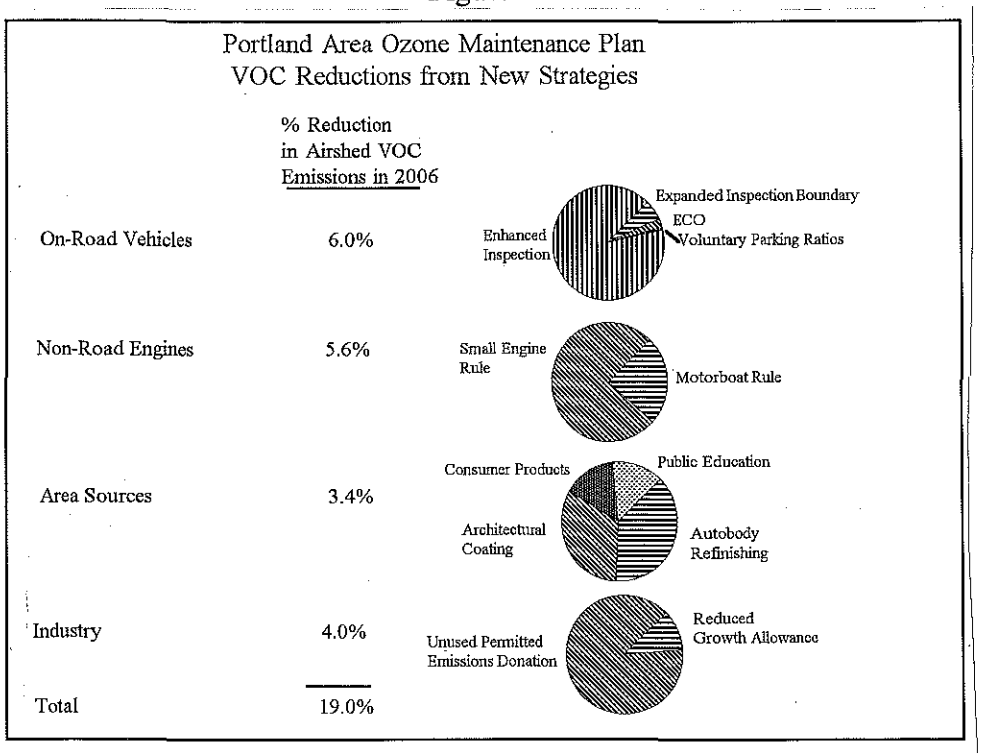
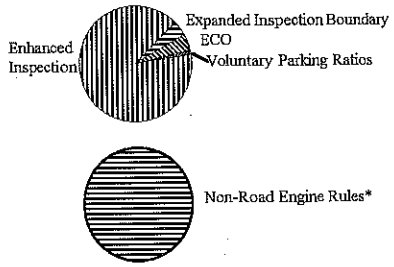


Figure 5

Portland Area Ozone Maintenance Plan
NOx Reductions from New Strategies

	% Reduction in Airshed NOx Emissions in 2006
On-Road Vehicles	7.5%
Non-Road Engines	3.4%
Area Sources	0%
Industry	0%
Total	10.9%



* Note: Diesel rule results in NOx reduction. Small engine rule and motorboat rules result in small NOx increases - net change shown

ON-ROAD VEHICLE STRATEGIES

Enhanced Vehicle Emission Inspection

The largest proposed VOC and NO_x emission reductions in the plan will come from improvements to the current DEQ vehicle inspection program. The current basic inspection will be modified to test emissions while vehicles are put through a driving cycle that includes acceleration and deceleration. In addition, the evaporative control system, including the charcoal canister and gas cap, will be tested for proper function. These tests will be conducted on cars where it would be most cost-effective, that is the 1981 model year through models that are 6 years old. DEQ will also inspect on-board emission control diagnostic systems installed in 1996 and newer vehicles. The current basic test, with the addition of the gas cap test, will continue for 1975 to 1980 vehicles and for vehicles up to 5 years old. The enhanced program will be phased in over a two year period beginning in 1997.

Expanded Vehicle Inspection Boundary

The 1993 Legislature directed the EQC to expand the vehicle inspection boundary expansion as one element of the maintenance plan. The EQC adopted an expanded boundary in July 1994 which included the more densely populated portions of the Tri-County area and small neighboring portions of Columbia, Marion and Yamhill Counties. DEQ relied on U.S. Census data to select areas that had high commute rates into the Portland airshed.

The 1995 Legislature expressed concern about the boundary expansion into the three Counties outside of the Tri-County area. DEQ has further evaluated Census data, and now proposes to remove from the expanded boundary those areas with less than 40 percent of their work force commuting into the Portland airshed. This would remove from the expansion some areas in Clackamas, Marion and Yamhill Counties, but retain some areas in Columbia and Yamhill Counties.

Removal of Old Vehicle Exemption from Vehicle Inspection Program

This strategy eliminates the exemption from testing for vehicles that are 20 or more years old. Vehicles made in 1975 and later model years will be permanently included in the testing program.

Employee Commute Option Program

This proposed program would require employers with 50 or more employees to provide alternatives to drive-alone commuting to work. The program has a 10 percent trip reduction target, and will help reduce congestion in addition to reducing emissions. Based on recommendations from DEQ advisory committees, the program has been designed to minimize administrative burdens, provide alternative compliance options, give credits for past efforts to reduce commute trips, and allow exemptions in cases where no practical alternatives are available. Employers will be free to choose commute options that work best for their businesses. Some commute options, such as a four day work week and telecomuting, offer the opportunity for businesses and commuters to save money. Carpools, vanpools and transit assistance are other options. Employers may also choose to reduce emissions at the work site as an alternative to reducing commute trips. Alternative emission reduction strategies, such as replacing propane or gasoline forklift trucks with cleaner and less costly electric forklifts, offer businesses additional ways to save money.

Employers that make good faith efforts to meet the trip reduction target but do not meet it will be considered in compliance with the program and will not be penalized.

Voluntary Parking Ratio Program

This proposed program would establish a voluntary maximum number of parking spaces for new non-residential development based on the size and type of facility. The objective of the program is to encourage developers to design and locate new facilities in ways that reduce parking needs by providing good opportunities for walking, bicycling and using transit. The program was originally intended to be mandatory, but it will be implemented on a voluntary basis because of concerns expressed by developers and because Metro is proceeding to develop regional maximum parking ratios. Incentives to participate in the voluntary program will include exemption from the ECO program and priority processing of any applicable DEQ permit.

Metro 2040 Growth Concept

Metro's new land use and transportation plan is designed to significantly improve the balance between motor vehicles and other less polluting forms of transportation. The concept calls for increasing density, building residences within walking distance of businesses, and substantially expanding infrastructure for transit and other alternative modes. Credit for this program was included in the motor vehicle emission forecast prepared by Metro for the maintenance plan. The Urban Growth Boundary and Metro's Interim Region 2040 Implementation Measures will be included in the maintenance plan to meet EPA enforceability requirements for emission control strategies.

Metro Transportation Control Measures

Several significant public transportation improvements identified in Metro's Regional Transportation Plan were included in motor vehicle emission forecasts prepared by Metro for the maintenance plan. Because these improvements reduce motor vehicle emissions, the Clean Air Act/Transportation Conformity process requires DEQ to identify them in the maintenance plan to ensure that they are funded and implemented in a timely manner. The improvements over the next ten years include:

- South-North Light Rail Lines;
- An average 1.5 percent per year increase in regional transit service;
- Bicycle and pedestrian improvements, where such facilities do not exist, when major roads are expanded or reconstructed;
- At least 28 miles of additional bikeways; and
- At least nine miles of additional pedestrian facilities.

Transportation Emission Budget

The Clean Air Act requires Metro to demonstrate that its transportation plans conform to air quality plans. This conformity analysis is required to receive federal transportation funding. Presently, Metro must show that projected emissions from implementation of a transportation plan (i.e. "build" case) will not exceed either the 1990 emissions or the projected emissions without the transportation plan (i.e. "no-build" case).

The maintenance plan includes transportation emission budgets to ensure that emissions from on-road transportation sources do not exceed the levels forecast for the maintenance plan. Upon adoption of the maintenance plan, Metro must demonstrate that transportation plans conform to the emission budgets. Upon EPA approval of the emission budgets in the maintenance plan, the 1990 and build/no-build conformity tests will be eliminated. This will give Metro greater flexibility in planning and implementing the Region's transportation system.

NON-ROAD ENGINE STRATEGIES

Credit is included in the plan for recent EPA emission standards for new non-road engines. These standards will affect new lawn and garden equipment (such as lawnmowers and chain saws), motor boat engines (such as 2-cycle outboards and inboard pleasure boat engines), and diesel construction equipment.

AREA SOURCE STRATEGIES

In 1995, EQC adopted rules which will reduce VOC emissions from autobody refinishing, architectural coatings (such as house paints) and a variety of consumer products (such as aerosol sprays, air fresheners and windshield washer fluids). Although EPA may adopt similar programs, state rules will ensure achieving emission reductions during the early years of the maintenance plan.

INDUSTRIAL EMISSION STRATEGIES

No new emission reduction strategies have been included in the plan for industrial sources because emissions from these sources were reduced under the original attainment plan and because additional retrofit control technology would not be cost-effective. However, the maintenance plan includes emission reduction credit for Reasonably Available Control Technology (RACT) updates required by the 1990 Clean Air Act Amendments. In addition, the maintenance plan will include programs to manage industrial permitted emissions. Industrial sources have held a substantial amount of unused permitted emissions (over 5000 tons per year of VOCs). To meet EPA requirements, the maintenance plan must be based on allowable (i.e. permitted) emissions. If industry increased emissions to the full permitted level, maintenance of the ozone standard could not be demonstrated. The following programs were designed to manage industrial emissions consistent with the needs of the maintenance plan.

Voluntary Unused Permitted Emission Donation Program

DEQ's original emission forecasts of industrial emissions were based on actual emission levels occurring in the 1992 attainment year. Normally to meet EPA requirements, a regulatory program would be needed to limit permitted emissions to near actual emission levels. However, a voluntary donation program of unused permitted emissions was conceived to achieve this objective. Incentives to participate were offered to businesses with large amounts of unused permitted emissions, including exemption from the ECO program, priority permit processing, and priority use of an industrial growth allowance to be built into the plan for new and expanding industries.

Unused Permitted Emissions Management Program

While the voluntary donation program and other programs have enabled DEQ to balance the maintenance plan in the 2006 design year, attainment cannot be demonstrated in intervening years if all the remaining unused permitted emissions are used right away. While it is not expected that actual emissions for industry will reach permitted emission levels during the interim years, a program is needed to assure that total permitted emissions remain within acceptable levels to meet EPA requirements.

DEQ is seeking further donations to avoid a formal regulatory program to manage the use of unused permitted emissions in the interim years of the plan. If and when sufficient donations are obtained, DEQ will drop a backup plan that could include requirements to purchase temporary emission offsets or implement other equivalent measures that would keep emissions within acceptable levels.

Industrial Growth Allowance Program

The maintenance plan will include a VOC and NO_x growth allowance for major new and expanding industries. Provision of a growth allowance in the plan will allow the present emission offset requirements to be eliminated. The growth allowance will build up over time; about 35 percent will be available in the first three years of the plan, about 20 percent will be added in years 4 to 5, another 20 percent will be added in years 6 to 7, and the final 25 percent will be added in the last three years. The growth allowance will be allocated on a first-come, first-served basis, except that sources that voluntarily donated permitted emissions will receive priority over sources that did not donate. No business will be awarded more than 50 percent of the remaining growth allowance or 10 tons, whichever is greater.

The VOC growth allowance was originally designed to build up to approximately 1000 tons per year by 2006, based on historic industrial emission growth rates. Because of a shortfall in the voluntary donation program and other changes to the plan, the VOC growth allowance will have to be reduced by about 150 tons per year. DEQ will work to increase the growth allowance by utilizing additional voluntary donations and any future emission reductions that were not relied upon in demonstrating maintenance of the ozone standard.

Reasonably Available Control Technology (RACT)

The maintenance plan includes a base assumption that RACT updates required by the 1990 Clean Air Act Amendments will reduce emissions from several existing major industrial sources. This includes source-specific RACT requirements for two surface coating operations, a solvent metal cleaning operation, and a mineral products firm. In addition, the plan assumes emission reductions from RACT requirements for several industrial source categories including aerospace component coating operations and barge loading operations at gasoline terminals. A planned gasoline pipeline is now expected to provide emission reductions equivalent to barge loading RACT.

PUBLIC EDUCATION AND INCENTIVE PROGRAM

An intensive and long term public education and incentive program is included to achieve additional emission reductions and to help implement other programs in the maintenance plan. Because this is an experimental program, EPA will approve a limited amount of emission reduction credit only if DEQ commits to quantify the reductions achieved within 3 years and implement a mandatory back-up strategy if the program fails to meet its objectives. DEQ, along with private sector partners, will encourage the public to choose consumer products that emit fewer VOCs, reduce motor vehicle trips, use electric and hand gardening tools, and curtail

polluting activities such as lawn mowing on high pollution days. Advertising, discounts and other incentives will be used to achieve measurable emission reductions.

CONTINGENCY PLAN

The Clean Air Act requires that maintenance plans include contingency plans to be implemented in the event that the maintenance plan fails. The Governor's Task Force recommended that Reformulated Gasoline and Congestion Pricing be the primary contingency measures. Alternatives may be identified if and when the contingency must be implemented. The Clean Air Act also requires the contingency plan to include any emission reduction strategies that are discontinued under the maintenance plan.

If future emissions are higher than forecast or the ozone standard is exceeded twice in three years (four exceedances in three years at the same monitoring site would be a violation), DEQ will conduct a study and recommend one or more of the following:

- reformulated gasoline (after 2005), congestion pricing, or other appropriate control measure;
- additional studies to determine if further measures are needed; or
- no further action because the problem was caused by emission factor changes, temporary emission increases, or an exceptional event.

If a violation of the ozone standard occurs:

the industrial growth allowance will be eliminated, and costly LAER and emission offsets will again be required for major new and modified industry in the Portland area and within a 30 kilometer buffer area;

- DEQ will consider opting-in to the federal reformulated gasoline program unless it is prior to 2005 or EPA rules do not allow the Portland area to opt-in. If reformulated gasoline is not implementable, DEQ will convene an advisory committee to develop a regional congestion pricing program or identify an equivalent measure.

AUTHORITY OF THE COMMISSION WITH RESPECT TO THE ISSUE

The Commission's authority for action on this issue is contained in Oregon Revised Statutes (ORS) Chapter 468A which gives the Commission the power to adopt plans and programs to achieve and maintain federal and state ambient air quality health standards.

ALTERNATIVES AND EVALUATION

The ECO program, Parking Ratio program and the expanded vehicle inspection boundary emerged as the most contentious issues of the ozone maintenance plan. The Department has made the following recommendations in response to concerns expressed by the Legislature and advisory committees:

- Reduce the trip reduction target for ECO from 15 percent to 10 percent;
- Change the Parking Ratio program from mandatory to voluntary with incentives; and
- Eliminate areas from the expanded vehicle inspection boundary with commute rates into the airshed of less than 40 percent.

The size of the industrial growth allowance and the unused permitted emission management program have also emerged as concerns. Because the unused permit limit donation program was not as successful as originally envisioned, the growth allowance had to be reduced to balance the maintenance plan. At first it appeared that the VOC growth allowance would have to be reduced by nearly 50 percent, but it now appears that the growth allowance will have to be reduced by no more than 10 to 20 percent. Industrial representatives have indicated to the Department that they will seek to further increase donations of unused permitted emissions as an alternative to implementing the unused permitted emission management program in the intervening years of the plan.

Through the interagency consultation process, Metro has recommended to the Commission that ECO, Parking Ratios and the vehicle inspection boundary be revised as recommended by the Department. Metro also recommended that emission reductions from future transportation control measures (TCMs) adopted by Metro be used to increase the industrial growth allowance up to the original level if the reductions are not needed to meet the emission budgets.

SUMMARY OF PUBLIC INPUT OPPORTUNITY

There was an extensive public involvement process associated with the four-year development of the ozone maintenance plan. The Governor's Task Force conducted public opinion surveys and provided public involvement opportunities during 1992. The plan was the subject of committee hearings during both the 1993 and 1995 Legislative sessions. Several public workshops and

hearings were conducted during adoption of the expanded vehicle inspection boundary in 1994. Also during 1994, numerous advisory committees were established to develop the ECO, Parking Ratio and area source programs. The Metro interagency consultation process included opportunities for public comment during 1995 and early 1996. The final opportunity for public involvement will take place through the normal EQC public hearing process for adopting the maintenance plan SIP revision.

CONCLUSIONS

The Portland area has attained compliance with the federal standard for ground-level ozone. However, rapid population and traffic growth will result in future violations unless additional control measures are implemented. DEQ has developed an ozone maintenance plan through an extensive public process over a four year period. The proposed plan includes emission reduction strategies affecting all major categories of ozone producing substances, and generally represents the most cost-effective approaches of possible alternatives. The plan provides for maintenance of the ozone standard for ten years, and will allow EPA to redesignate the Portland area to an attainment area for ozone. The maintenance plan and redesignation will assure that public health is protected, will remove Clean Air Act impediments to industrial growth, and will shield the Portland area from Clean Air Act sanctions on federal transportation funds.

INTENDED FUTURE ACTIONS

The Air Quality Division will seek hearing authorization from the Director by April 12, 1996, so the hearing notice can be published in the Secretary of State's Bulletin on May 1, 1996. Public hearing(s) will be held in Portland on May 22, 1996. This would allow for the ozone maintenance plan SIP revision to be considered for adoption at the July 12, 1996 Commission meeting.

DEPARTMENT RECOMMENDATION

It is recommended that the Commission accept this report, discuss the matter, and provide advice and guidance to the Department as appropriate.

REFERENCE DOCUMENTS (AVAILABLE UPON REQUEST)

Final Report, Governor's Task Force on Motor Vehicle Emission Reductions in the Portland Area.

Findings and Recommendations, House Special Task Force on Emissions, 3/31/93.

House Bill 2214 (1993).

House Bill 3448 (1995 - Vetoed).

Approved:

Section:

Division:

Report Prepared By: Andy Ginsburg

Phone: 229-5581

Date Prepared: March 19, 1996

E:\Winword\ O3info.doc

Environmental Quality Commission

☐ Rule Adoption Item
☐ Action Item
☒ Information Item

Agenda Item F
April 11, 1996 Meeting

Title:

Portland Area Carbon Monoxide Maintenance Plan -- Informational Report

Summary:

The purpose of this report is to provide the Commission with an update of the Portland Area Carbon Monoxide Maintenance Plan, including the plan development process, key proposed strategy elements, issues of remaining controversy, and an evaluation of strategy/policy alternatives as background for Commission adoption of the plan in July 1996. The Department previously briefed the Commission on the development of the City of Portland's Central City Transportation Management Plan (CCTMP) and its relationship to the early stage development of the ten-year, Portland area carbon monoxide (CO) maintenance plan in a December 10, 1993 informational report.

Department Recommendation:

It is recommended that the Commission accept this report, discuss the matter, and provide advice and guidance to the Department as appropriate.

Report Author | Division Administrator | Director

Accommodations for disabilities are available upon request by contacting the Public Affairs Office at (503)229-5317(voice)/(503)229-6993(TDD).

State of Oregon
Department of Environmental Quality Memorandum

Date: March 28, 1996

To: Environmental Quality Commission

From: Langdon Marsh, Director

Subject: Agenda Item F
April 11, 1996 EQC Meeting

Portland Area Carbon Monoxide Maintenance Plan--Informational Report

STATEMENT OF PURPOSE

The purpose of this report is to provide the Commission with an update of the Portland Area Carbon Monoxide Maintenance Plan, including the plan development process, key proposed strategy elements, issues of remaining controversy, and an evaluation of strategy/policy alternatives as background for Commission adoption of the plan in July 1996. The Department previously briefed the Commission on the development of the City of Portland's Central City Transportation Management Plan (CCTMP) and its relationship to the early stage development of the ten-year, Portland area carbon monoxide (CO) maintenance plan in a December 10, 1993, informational report (Attachment A).

BACKGROUND

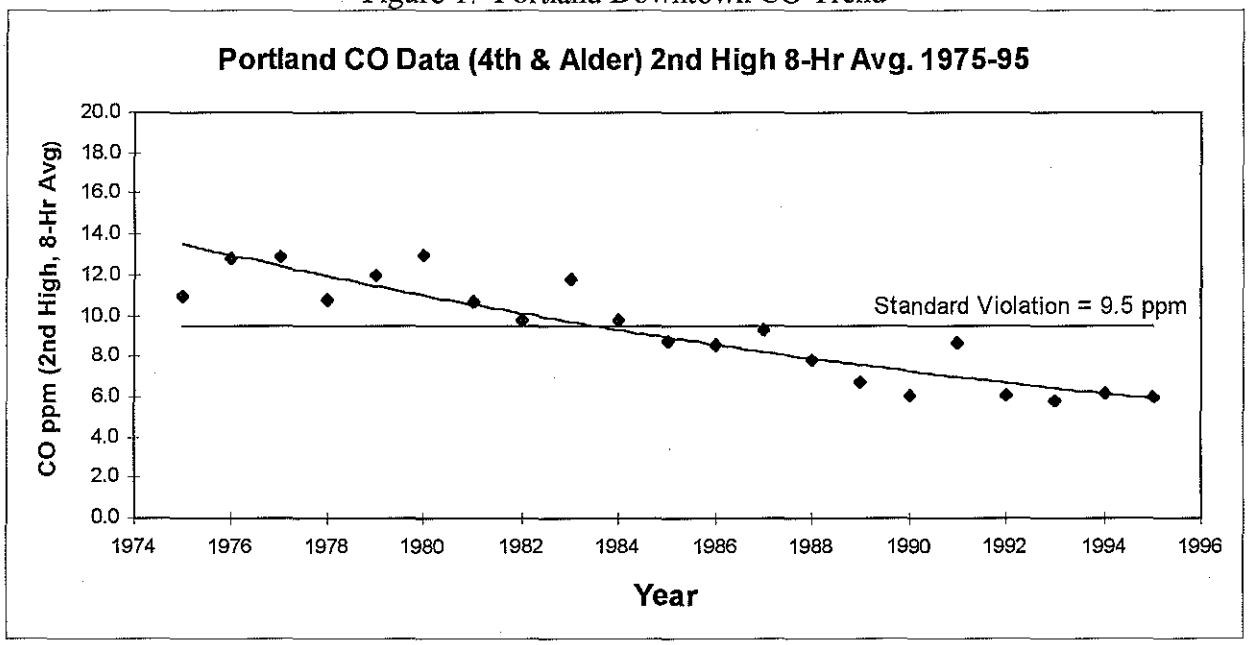
What is Carbon Monoxide?

Carbon monoxide (CO) is a colorless, odorless, highly toxic gas. It decreases the oxygen carrying capacity of the blood. High concentrations can severely impair the function of oxygen-dependent tissues, including the brain, heart and muscle. Prolonged exposure to even relatively low levels of CO can aggravate existing conditions in people with heart disease or circulatory disorders. Motor vehicles are the predominate source of CO in Oregon, but another significant source includes wood stoves.

Past CO Problem

The Portland area exceeded the federal 8-hour CO standard of 9 parts per million approximately one day out of every three in the early 1970's. Maximum 8-hour CO levels were more than twice the standard level. By the mid to late 1970's the frequency of exceedances had dramatically declined, but maximum levels were about 50 percent above the standard level. The trend in CO from the long-term, 4th & Alder CO monitor in downtown Portland is shown below in Figure 1.

Figure 1: Portland Downtown CO Trend



Success in Controlling CO

CO control strategies have been successful in bringing the Portland area into attainment with the 8-hour CO standard. Compliance was achieved in 1991, based on the 82nd and Division CO monitor. This was ahead of the Federal Clean Air Act deadline of December 31, 1995. These strategies focused primarily on:

- Motor vehicles (federal new car emission standards, DEQ vehicle inspection program, Tri-Met transit improvements, traffic flow improvements, and City of Portland Downtown Parking and Circulation Policy), which included maximum parking ratios and a parking lid;

- Gasoline (additional emission reductions from implementation of a wintertime oxygenated fuel program, starting in 1992).

Need for Maintenance Plan

Projections of Future CO Levels

Motor vehicle CO emission controls are projected to be increasingly effective in future years. The fleet average emission rate is expected to decrease by 54 percent from 1990 to 2006.

A high growth scenario was analyzed for the critical Central City area to determine the combined effect on CO air quality of the increased effectiveness of vehicle emission controls and increased vehicle travel caused by growth. The high growth scenario included adding 75,000 new jobs and 15,000 new housing units in the area over the next 20 years, extension of the downtown maximum parking ratio concept to the Central City area and elimination of the downtown parking lid. Results indicate the CO standard can be maintained through a variety of possible strategies.

Benefits of Maintenance Plan

In order for the Environmental Protection Agency (EPA) to redesignate the Portland area from nonattainment to attainment, an enforceable plan is needed that demonstrates how the area will continue to meet the CO standard for a minimum of ten years. An EPA-approved CO maintenance plan and redesignation to attainment will provide the following benefits:

- Assurance that Public Health will be protected from adverse impacts of CO;
- Removal of industrial growth impediments (LAER and offsets);
- Protection against Clean Air Act sanctions on federal transportation funds;
- Elimination of the downtown parking lid, which is now an impediment to growth in the area.

Maintenance Plan Development Process

The City of Portland process of developing the Central City Transportation Management Plan (CCTMP) was primarily used to develop the CO maintenance plan provisions. This nearly five-year planning process to address a "build out" condition by 2010 and beyond was culminated in City Council adoption of implementing ordinances in December 1995. This plan included:

- retention of the maximum parking ratios in effect for the last twenty years in the downtown area with slight modification,

- application of maximum parking ratios to the entire Central City area,
- allowance for new structured parking to serve existing older buildings, and
- elimination of the downtown parking lid.

In addition, Metro intensively reviewed and made recommendations on the transportation control measures supporting the plan, and the transportation emission budgets reflected by the plan. These elements would be used for setting priorities for use of transportation funds and for transportation conformity determinations enabling continued flow of federal transportation funds.

Maintenance Plan Summary

Federal New Car Program

The federal new car program has been and will continue to be the most effective CO emission reduction strategy. In contrast to other pollutants, vehicle CO emission controls have not experienced much deterioration of performance with increased age and mileage. An additional 54 percent reduction in the fleet average emission rate is expected over the next ten years. Expected improvements in CO emission control technology include heat catalyzers which will help reduce the higher emissions from cold starts.

Enhanced Vehicle Emission Inspection

This strategy is being implemented as a necessity for the Portland area ozone maintenance plan, but it will provide CO emission reductions as well. The current basic inspection will be modified to test emissions while vehicles are put through a driving cycle that includes acceleration and deceleration. This test, a gas cap test and other evaporative system tests will be conducted on cars where it would be more cost-effective, that is, the 1981 model year through cars that are six years old. DEQ will also inspect emission control, onboard diagnostic computer systems installed in 1996 and newer vehicles. The current basic test, with the addition of the gas cap test, will continue on other-aged, vehicles. The enhanced program will be phased in over a two-year period beginning in 1997.

Parking Restrictions

Maximum parking ratios and a parking lid played a significant role over the last twenty years in keeping the downtown Portland CO problem from getting worse while CO tail pipe emission controls were phased in. The parking lid is now creating a barrier to growth in the downtown. The Central City Transportation Management Plan (CCTMP) is designed to minimize new vehicle traffic in the Central City and encourage alternative travel modes by extending the downtown maximum parking ratio concept to the entire Central City area, while lifting the downtown parking lid.

Transportation Control Measures

The CCTMP high growth scenario assumed implementation of several significant Transportation Control Measures (TCMs). The Clean Air Act requires such TCMs to be included in the air quality plans. TCMs are thereby made federally enforceable, and local governments must give TCM projects priority funding. Metro has agreed to include the following TCMs in the CO maintenance plan:

- 2040 Growth Concept (explained below);
- An average 1.5 percent increase in regional transit service, with an equal increase for the Central City;
- Completion of Westside Light Rail;
- South-North Light Rail by 2007;
- Pedestrian and bicycle improvements where such facilities do not exist on all major roadway expansion, or reconstruction projects;
- At least 28 miles of additional bikeways; and
- At least 9 miles of additional pedestrian facilities.

A provision will be added to the maintenance plan allowing Metro to substitute equivalent TCMs should the need arise.

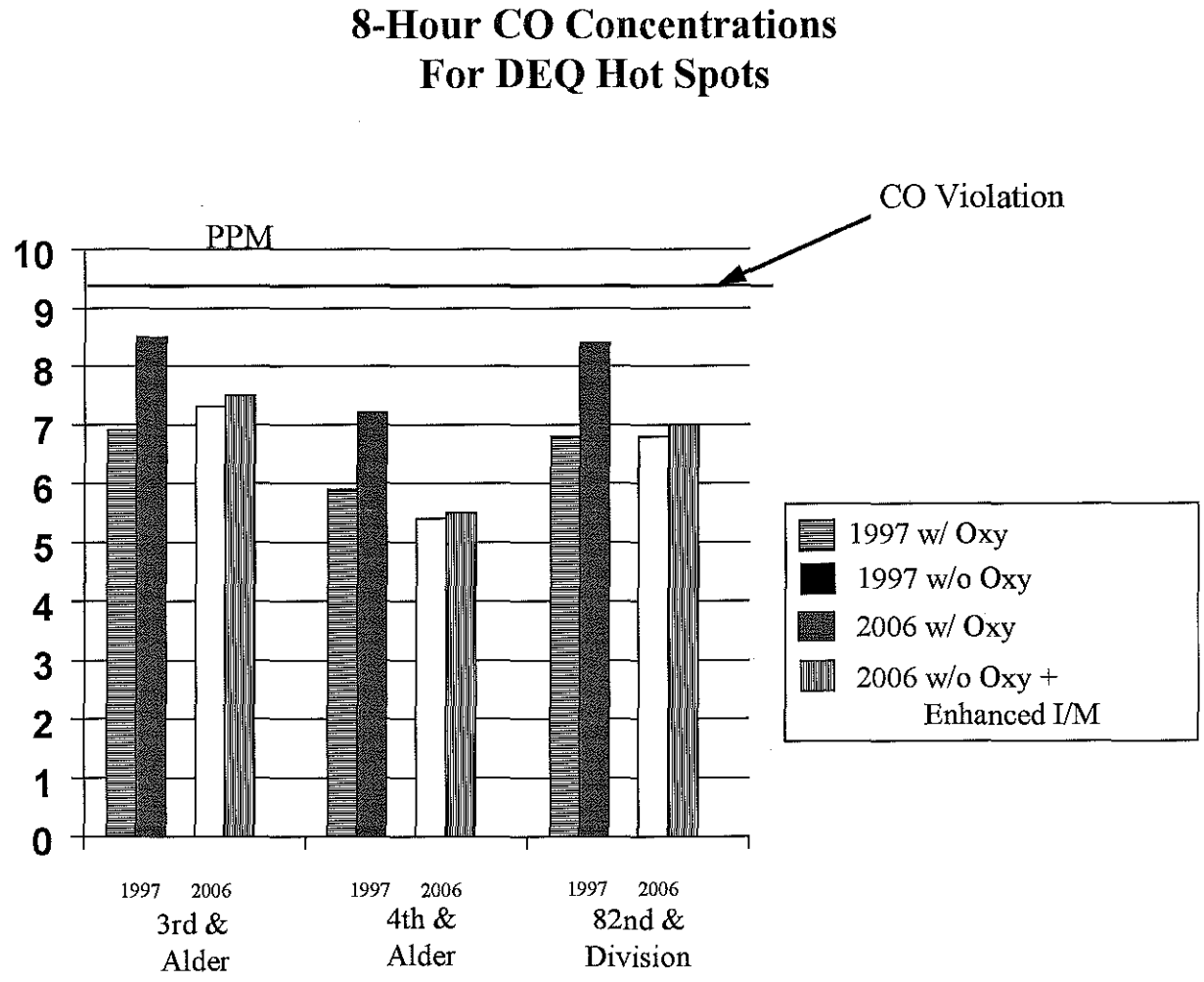
Metro 2040 Growth Concept

Metro's new land use and transportation plan is designed to significantly improve the mode split between motor vehicles and other less polluting forms of transportation. The concept calls for increasing density, building residences within walking distance of businesses, and substantially expanding infrastructure for transit and other alternative modes. Credit for this program was included in the motor vehicle emission forecast prepared by Metro for the maintenance plan. The Urban Growth Boundary and Metro's Interim Region 2040 Implementation Measures will be included in the maintenance plan to meet EPA enforceability requirements.

Oxygenated Fuels

The 1990 Federal Clean Air Act Amendments required the Portland area to implement an oxygenated fuel program to control CO. It was required to be implemented in 1992, even though standard compliance had been achieved by 1991. If the oxygenated fuel program were repealed, attainment levels are projected to be maintained with a 11percent (1.0 part per million) margin in the immediate future. With oxygenated fuel, the margin would be 27 percent (2.6 ppm). The margin would increase further with time, as the federal new car program continues and the enhanced vehicle inspection program is phased in. These projected impacts are shown in Figure 2.

Figure 2: 8-Hour CO Concentrations for DEQ Hot Spots



Metro has recommended that the oxygenated fuel program be continued at least until the 1998/1999 winter and then evaluated as to whether it should be continued. The ethanol industry supports continued operation of the program. The petroleum industry supports an immediate repeal, based on a lack of need for the program and cost impacts. The Department is still evaluating conflicting cost information, policy considerations and possible legal preemption by the Federal Clean Air Act from continuing the program if there is no need for the program.

CO Emissions Budgets

Transportation conformity regulations, required by the 1990 Federal Clean Air Act Amendments, provide for the creation/identification of motor vehicle emissions budgets in the State Implementation Plan (SIP). An emissions budget is explicitly identified from the motor vehicle portion of a projected emission inventory. Emissions budgets establish a cap on emissions which cannot be exceeded by predicted motor vehicle emissions. In the Portland area, Metro forecasts motor vehicle emissions as part of periodically updating the long-range, regional transportation plan (RTP) and the Transportation Improvement Program (TIP). Metro's emission forecast must be consistent with the SIP emissions budget(s).

For CO, three emissions budgets have been developed: an overall regional budget and two hot spot budgets (areas of past CO standard violations), one for the Central City and the other for the 82nd Avenue Corridor between SE Division and SE Foster Rd. The proposed emissions budgets are shown in Attachment B.

Contingency Plan Elements

The maintenance plan must contain contingency measures that would be implemented either to prevent or correct a violation of the CO standard after the area has been redesignated to attainment. The Clean Air Act requires measures that were in the original attainment plan to be reinstated if a standard violation occurs. Under the proposed contingency plan, adopted under the CCTMP and recommended by Metro, the Department would convene a planning group if the validated second highest 8-hour CO concentration equals or exceeds 8.1 ppm (90 percent of the 8-hour CO standard). A range of action would be considered from implementing candidate measures to deciding to do nothing. However, if a violation of the 8-hour CO standard were to occur within the defined area of the former Downtown Parking and Circulation Policy, roughly the Central Business District of downtown Portland, then the parking lid would be reinstated. Other restored control measures include Lowest Achievable Emission Rate (LAER) plus offsets for major new and modified industrial sources and wintertime oxygenated gasoline at 2.7 percent weight for motor vehicles. The parking lid would not be reinstated if a violation occurred outside the downtown area.

AUTHORITY OF THE COMMISSION WITH RESPECT TO THE ISSUE

The Commission's authority for action on this issue is contained in Oregon Revised Statutes (ORS) chapter 468A which gives the Commission the power to adopt plans and programs to achieve and maintain federal and state ambient air quality health standards.

ALTERNATIVES AND EVALUATION

The continuation of the wintertime oxygenated fuel program has emerged as the sole contentious issue of the CO maintenance plan. Among the arguments for continuing the oxygenated fuel program is the City of Portland's concern about the risk of bringing back the parking lid if a standard violation occurred in the downtown. Metro has recommended continuing the program and evaluating its continued need after the 1998/1999 winter. This recommendation was made on the basis that projected CO levels would be too close to nonattainment in the next few years.

The ethanol industry and the petroleum industry have presented markedly different cost information, and there is a legal question on the ability of the state to continue to require this fuel under Clean Air Act preemption provisions. The petroleum industry has cited cost impacts of up to $15 million per year for an unneeded program. The legal issue of the ability to continue the program is pending evaluation of an EPA legal opinion received on March 21, 1996. The range of cost impacts supplied by the petroleum and ethanol industry is shown in Attachment C. Once legal, cost and other debated issues are clarified, the Department will make a recommendation on the oxygenated fuel program as part of the CO maintenance plan rulemaking process.

There are at least three major alternatives with respect to oxygenated fuel for the Commission to consider:

1. Repeal immediately;

2. Continue the program through the winter season of 1998/1999 and reevaluate the need for continuation beyond 1998/1999 (Metro recommendation);

3. Eliminate the program after the winter season of 1998/1999.

SUMMARY OF PUBLIC INPUT OPPORTUNITY

There was an extensive public involvement process associated with the five-year development of the CCTMP. The Metro committee process also included opportunities for public comment. Following the Metro Council action on the maintenance plan strategies, the next opportunity for public involvement will take place through the normal EQC public hearing process for the maintenance plan SIP revision.

CONCLUSIONS

The Portland area has the necessary attainment monitoring data, and the Department has assembled the necessary maintenance plan documentation to allow the Portland area to be redesignated as an attainment area for CO by EPA. The proposed TCMs, including the Zoning Code provisions of the CCTMP, and other control strategies will provide for maintenance of the 8-hour CO health standard for at least a ten-year period. The continuation of the oxygenated fuel program is the sole contentious issue. The Department is seeking further information before making a recommendation.

INTENDED FUTURE ACTIONS

The Air Quality Division will seek hearing authorization from the Director by April 12, 1996, so the hearing notice can be published in the Secretary of State Bulletin on May 1, 1996. Public hearing(s) will be held in Portland on May 22, 1996. This would allow for the carbon monoxide maintenance plan SIP revision to be considered for adoption at the July 12, 1996, Commission meeting.

DEPARTMENT RECOMMENDATION

It is recommended that the Commission accept this report, discuss the matter, and provide advice and guidance to the Department as appropriate.

ATTACHMENTS

A) Central City Transportation Management Plan/Portland Carbon Monoxide Maintenance Plan Informational Report, for December 10, 1993, EQC Meeting
B) CO Emissions Budgets
C) Summary of Oxygenated Fuel Cost Impact Information Submitted to DEQ

REFERENCE DOCUMENTS (AVAILABLE UPON REQUEST)

Central City Transportation Management Plan, Plan and Policy, January 1996, as adopted by the Portland City Council Amendments to Central City Plan District (Chapter 33.510), Parking Regulations, January 1996, as adopted by the Portland City Council.

Approved:

Section: John F. Kowalczyk

Division: Gregory A. Green

Report Prepared By: Howard Harris

Phone: 229-6086

Date Prepared: March 28, 1996

ATTACHMENT A

State of Oregon
Department of Environmental Quality Memorandum[1]

Date: November 23, 1993

To: Environmental Quality Commission

From: Fred Hansen, Director

Subject: Agenda Item 2, December 10, 1993, EQC Meeting

Central City Transportation Management Plan/Portland Carbon Monoxide Maintenance Plan--Informational

Statement of Purpose

The purpose of this report is to provide the Commission with information on the nature of the transportation related air quality problems in the Portland region, with a particular focus on a recent planning effort for the Central City, known as the Central City Transportation Management Plan (CCTMP). This report will also outline the next steps in the preparation of a carbon monoxide maintenance plan and attainment redesignation request to EPA which will be based on the CCTMP.

Background

Motor vehicles have been the primary contributors to carbon monoxide and ozone air pollution in the Portland area as shown in Attachment 1. Carbon monoxide sampling, which began in the late 1960's, indicated that several traffic intersections in downtown Portland had serious carbon monoxide problems. The national health standard was exceeded on approximately one out of every three days. Sampling for ozone, which began in 1975, indicated that a broad area of the region had an ozone problem. Peak ozone levels were nearly twice the national health standard level in 1976. In response to the Clean Air Act of 1970 and the 1977 amendments, a comprehensive strategy was developed and submitted to EPA as a part of the State Implementation Plan (Attachment 2). Significant initiatives in that plan included establishment of the Portland area motor vehicle inspection and maintenance testing program, maximum ratios of allowed parking spaces per square foot of new development, a ceiling on the amount of parking that could be built in the downtown area, and major improvements in the transit system. The parking ceiling was adopted by the City of Portland as part of the city's Downtown Parking and Circulation Plan (DPCP) in 1975.

[1]Accommodations for disabilities are available upon request by contacting the Public Affairs Office at (503)229-5317(voice)/(503)229-6993(TDD).

ATTACHMENT A

Carbon monoxide and ozone air quality have dramatically improved in the Portland area, with levels currently below the National Ambient Air Quality Standards (NAAQS) (Attachment 3). However, future ozone levels are expected to exceed NAAQS as the area grows (Attachment 4). A regional strategy to maintain the ozone standard has been recommended by the State Task Force on Motor Vehicle Emissions in the Portland Area, with slight modifications by the 1993 Legislature (Attachment 5). The Commission will be involved in substantial rulemaking over the next eighteen months to adopt and implement this plan.

In contrast to future ozone levels and barring unforeseen highly localized traffic congestion, carbon monoxide levels are expected to drop substantially due to major improvements in the motor vehicle fleet performance (Attachment 6). However, the Portland area is still classified as nonattainment for CO and a long-range maintenance plan needs to be developed and submitted to EPA as a SIP revision in order to reclassify the area to attainment.

To develop the required CO maintenance plan, the City of Portland, several interest groups and governmental agencies, including the Department, have participated in the CCTMP study. The CCTMP contains the necessary policy framework and supporting technical data to advance the original vision of the Central City Plan toward a "buildout" condition to the year 2010 and beyond (Attachment 7). The study incorporates a High Growth scenario of 75,000 additional jobs and 15,000 new housing units (Attachment 8). The High Growth scenario and the supporting policies of the CCTMP provide the means for assuring and enhancing the vitality of the Central City. Regional emissions analysis (Attachment 9) indicates that the CCTMP would reduce overall regional motor vehicle travel by concentrating development in an area best served by transit and other travel modes, such as bicycles and walking. A common viewpoint of study participants is that the downtown parking ceiling has become counterproductive with respect to achieving the greater densities associated with the CCTMP. The ceiling on parking is seen as forcing Class A office space to the suburbs where no parking restrictions result in higher vehicle emissions than if development were downtown.

A key component of the CCTMP and ultimately, the CO maintenance plan would be a program to basically retain the existing downtown parking ratios, which assume that three of every four new employees will use other modes of travel besides single occupant vehicles. The CCTMP also extends the parking ratio concept to the entire Central City, with stringency levels commensurate with transit service (Attachment 10).

With this policy of curtailing traffic growth (Attachment 11) and supporting policies to enhance transit, bicycle and pedestrian service, the High Growth scenario air quality

modeling is expected to show maintenance of the CO health standards. Documentation of this analysis is expected shortly.

Authority of the Commission with Respect to the Issue

The Commission's authority for action on this issue is contained in Oregon Revised Statutes (ORS) Chapter 468A which gives the Commission the power to adopt plans and programs to achieve and maintain federal and state ambient air quality health standards.

Alternatives and Evaluation

An alternative to replacing the parking ceiling with a more extensive parking ratio program is to retain the ceiling. From an air quality standpoint, returning to the ceiling would further foster the current trend toward high single occupant vehicle commuter travel, characteristic of current suburban development. This would be counterproductive to addressing the regional ozone problem. The proposal for a more extensive parking ratio program in the emerging CCTMP, coupled with increased emission controls on new vehicles and other multi-modal policies of the CCTMP, should be sufficient to stay in compliance with the CO federal health standards while helping regional air quality.

Another issue which has a bearing on the effectiveness of the CCTMP in meeting air quality goals will be the establishment of regional parking ratios as part of the ozone maintenance plan. Regional parking ratios would help level the playing field and help avoid the Central City parking ratio proposal from becoming a further driving force for unconstrained suburban development and associated parking. The need for continuation of oxygenated fuels will be determined upon completion of the air quality analysis.

Summary of Public Input Opportunity

The public involvement process of the Central City Transportation Management Plan has been extensive. An organizational chart showing the committee structure of the study is shown in Attachment 12. Because of the comprehensive nature of the public involvement already undertaken by the city, the Department plans to rely primarily upon Metro's standing committees (Transportation Policy Alternatives Committee (TPAC), Joint Policy Advisory Committee on Transportation (JPACT), the Metro Planning Committee and the Metro Council) and the normal public hearing process for the maintenance plan SIP revision.

ATTACHMENT A

Conclusions

- The Portland area is in a position to develop air quality maintenance plans for CO and ozone which will allow the area to be redesignated to attainment. Effective regional strategies to reduce potential increases in vehicular trips are important to both the CO and ozone maintenance plans. However, transportation strategies for the Central City, which has been a hot spot for CO problems, are needed to insure this hot spot does not reoccur, considering the desire for a high growth rate in the area.

- The City of Portland's emerging CCTMP, with an expanded parking ratio program to replace the parking ceiling and policies to provide more multi-modal travel, will form the core of the CO maintenance plan and enhance the regional ozone maintenance plan.

Intended Future Actions

The Portland City Council is expected to adopt the CCTMP by June 1994. This will enable the Department to start the hearing authorization process on June 1, 1994. Public hearing(s) would be held in August 1994, and the Department should have a CO SIP revision maintenance plan for consideration at the October 21, 1994, Commission meeting.

Department Recommendation

It is recommended that the Commission accept this report, discuss the matter, and provide advice and guidance to the Department as appropriate.

Attachments

1) Emission Inventory Charts for CO and Ozone Precursors
2) Past Transportation Strategies for Portland Area Air Quality Problems
3) Portland Carbon Monoxide and Ozone Air Quality Trends
4) Future Ozone Trend
5) State Task Force/HB 2214 Strategies
6) Motor Vehicle CO Emission Rate Trend
7) CCTMP Planning Area
8) High Growth Scenario Employment and Housing
9) CCTMP Impact on Regional CO and Ozone Precursor Emissions
10) Past and Proposed Maximum Parking Ratios

11) CCTMP Rush Hour Traffic Increase
12) CCTMP Committee Organizational Chart

Reference Documents (available upon request)

Central City Transportation Management Policy, September 28, 1993 Draft
(This document contains the proposed parking policy, transit policy, pedestrian policy, bicycle policy, circulation policy and air quality policy.)

Approved:

Section: _____

Division: _____

Report Prepared By: Howard Harris

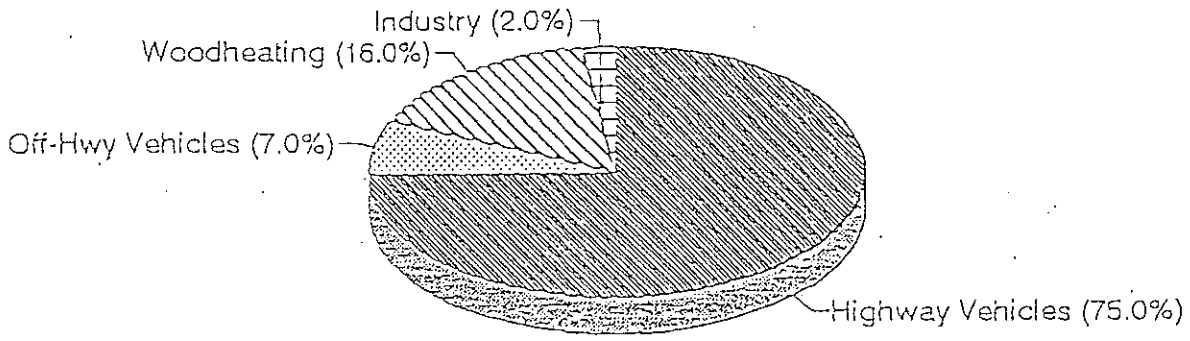
Phone: 229-6086

Date Prepared: November 22, 1993

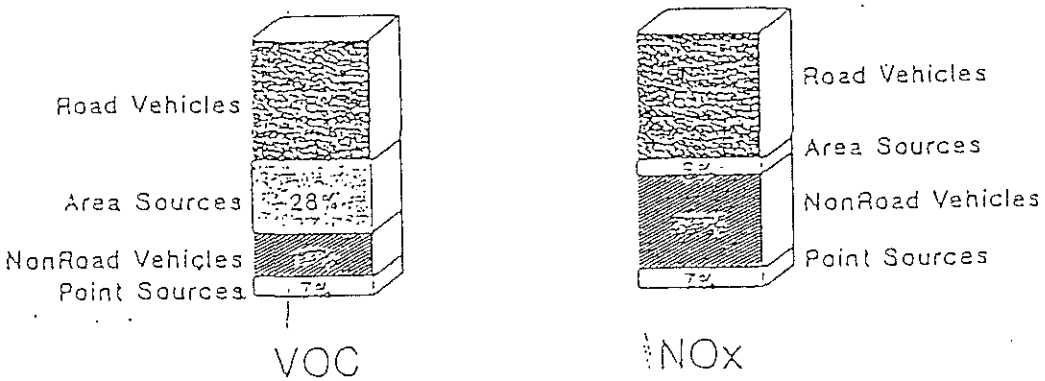
ATTACHMENT A1

Emission Inventory Charts for CO and Ozone Precursors

Portland 1990 CO Emission Inventory



Portland 1990 Ozone Precursors



ATTACHMENT A2

Past Transportation Strategies for Portland Area Air Quality Problems

"Attainment Plan" (Major Elements)

Tailpipe Controls

- Federal New Car Standards
- Vehicle Inspection Program
- Summer Low Volatility Fuel
- Winter Oxygenated Fuel
- Service Station Nozzle Controls*

Congestion Reduction

- Computerized Signalization Downtown
- Improvement at Intersection "Hotspots"
- Highway Expansions

Trip Reductions

- Transit Mall
- Light Rail
- Parking Ratios/Parking Lid Downtown
- Rideshare Programs

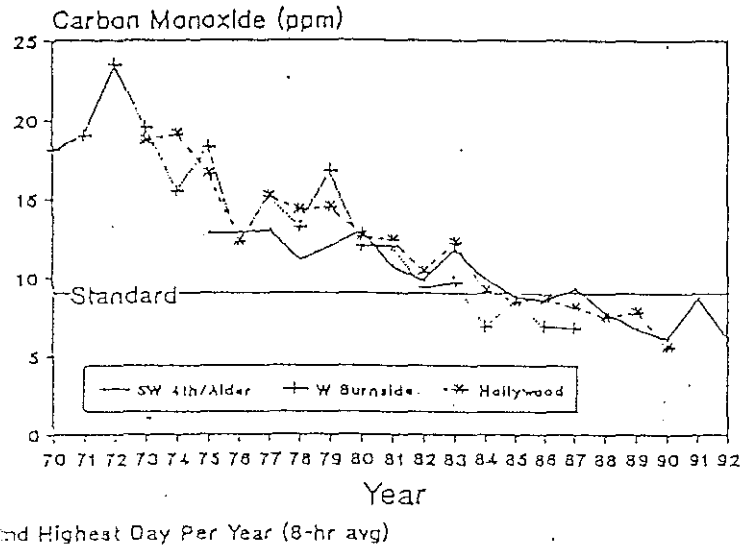
Other Sources

- Reasonably Available "VOC" Control on Industries

* State Backup Strategy not in SIP

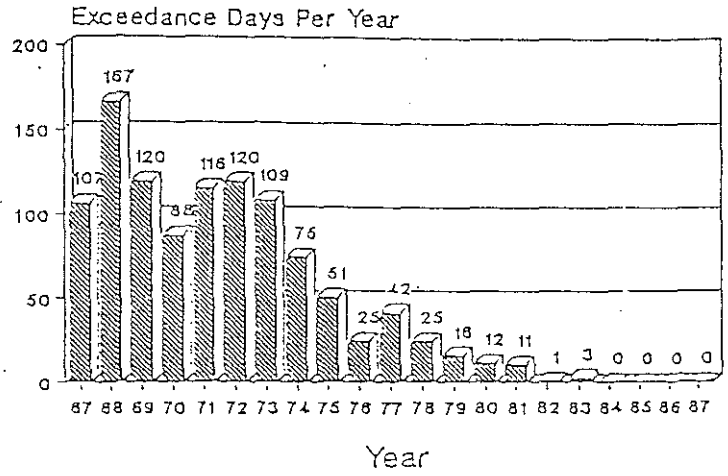
ATTACHMENT A3

Portland Carbon Monoxide Trends

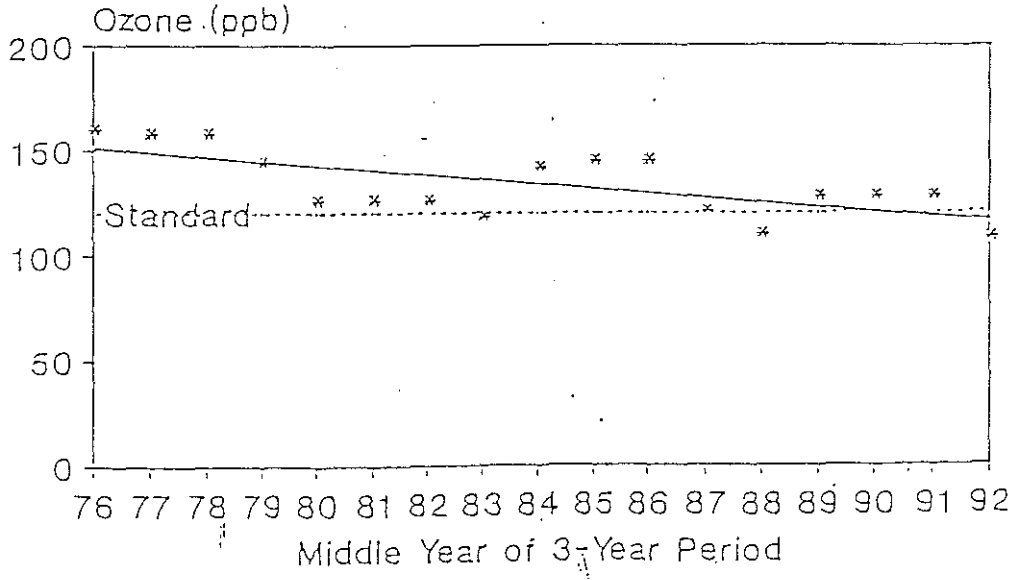


nd Highest Day Per Year (8-hr avg)

Portland Carbon Monoxide Violations
At CAMS Site, 718 W. Burnside

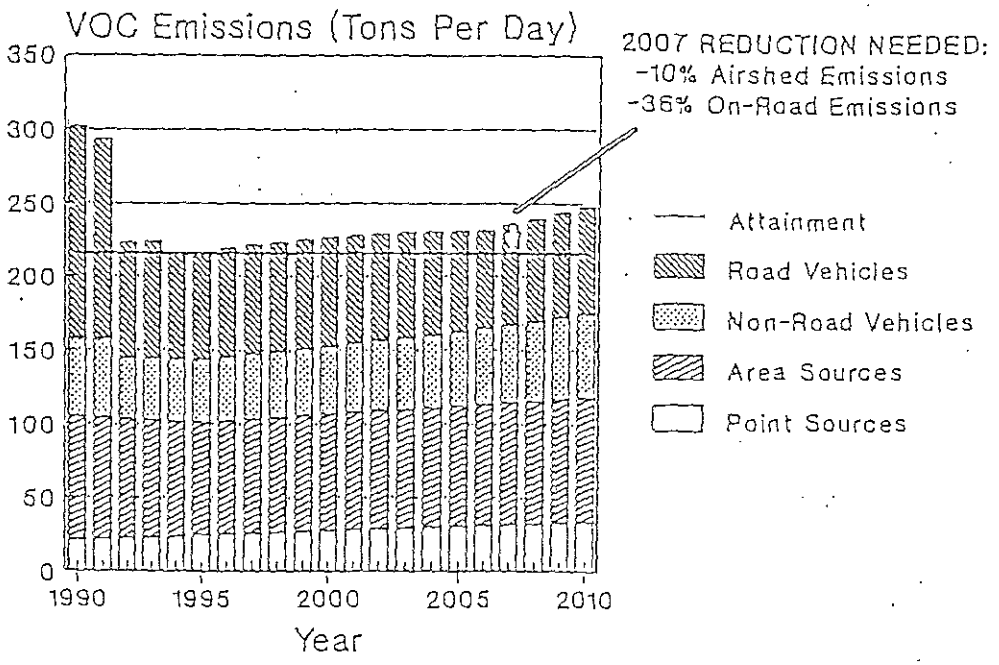


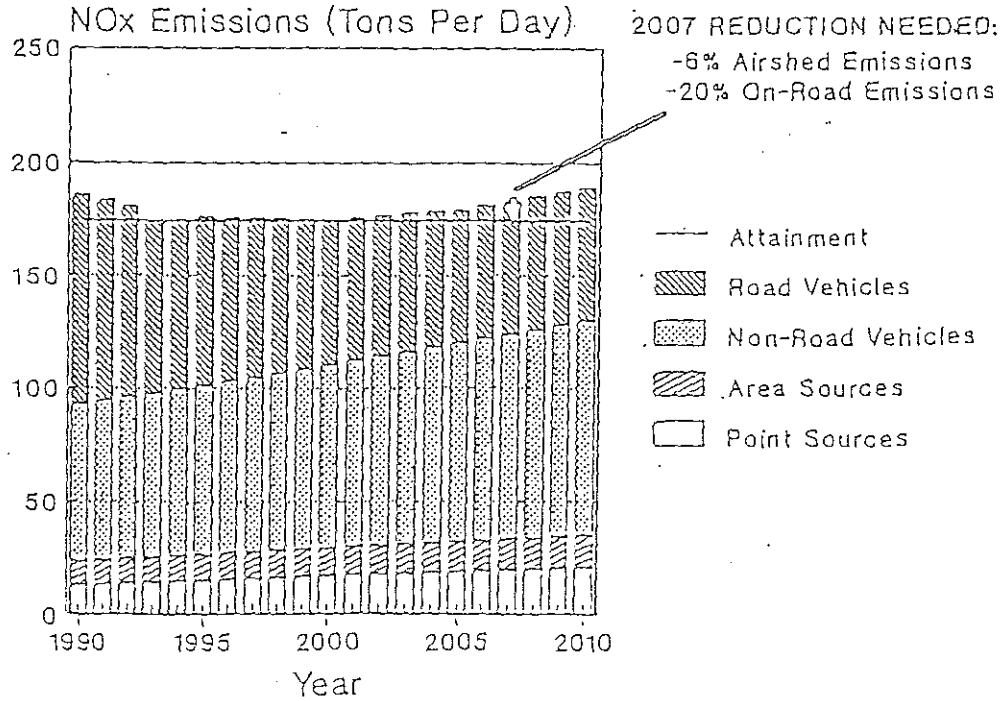
PORTLAND OZONE TREND



ATTACHMENT A4

Portland-Vancouver Ozone Precursors
Human-Caused Emissions: 1990 to 2010





ATTACHMENT A5

Portland Area Air Quality Maintenance Plan
Prepared for the House Special Task Force on Emissions
(Need 35.6% VOC / 20.2% NO_x reduction by 2007)

Endorsed Recommendations of State Motor Vehicle Task Force	Reductions % VOC	Reductions % NO_x	Legislation Needed
New Lawn and Garden Equipment Emission Standards	6.1%	0	
Enhance Vehicle Emission Inspection	17.5%	9.0%	*
Maintain 1974 and Newer Vehicles in Inspection Program	2.4%	0.8%	
Expand Vehicle Inspection Boundary [1]	1.0%	0.5%	
OLCO Land Use / Transportation Rule Credit [2]	5.2%	4.4%	
Mandatory Employer Trip Reduction Program	1.2%	1.1%	
Strategy Overlap	-1.1%	-0.5%	
Total	32.2%	15.3%	
Additional Strategies Identified by the House Special Task Force			
Clinton Energy Tax (7.5¢ per gallon of gasoline) [3]	0.6%	0.6%	*
Existing Fed. / State Public Fleet Alternative Fuel Program	0.1%	0	
Federal MACT Requirement on Existing Industry up to	6.0%	0	
Double Employer Trip Reduction Program	1.2%	1.1%	
Parking Ratios For New Construction (10% Reduction in New Space Utilization - 2006 credit)			
• Worker	0.8%	0.7%	
• Commercial / Retail	1.5%	1.3%	
Maintenance Plan Target Reduced From 2007 to 2006 [4]	1.9%	1.2%	*
Total	12.1%	4.9%	
Grand Total	44.3%	20.2%	

Safety Factor Strategy

1.	Adequately Funded Public Education Program ($1/vehicle/year).	1994
2.	Continue and improve public request for voluntary reductions in emissions on bad ventilation days.	1993
3.	Incident Management Program (rapid removal of accidents to minimize congestion)	TBD**
4.	Emission Standards for new outboard motors if and when California or EPA adopts such standards.	—

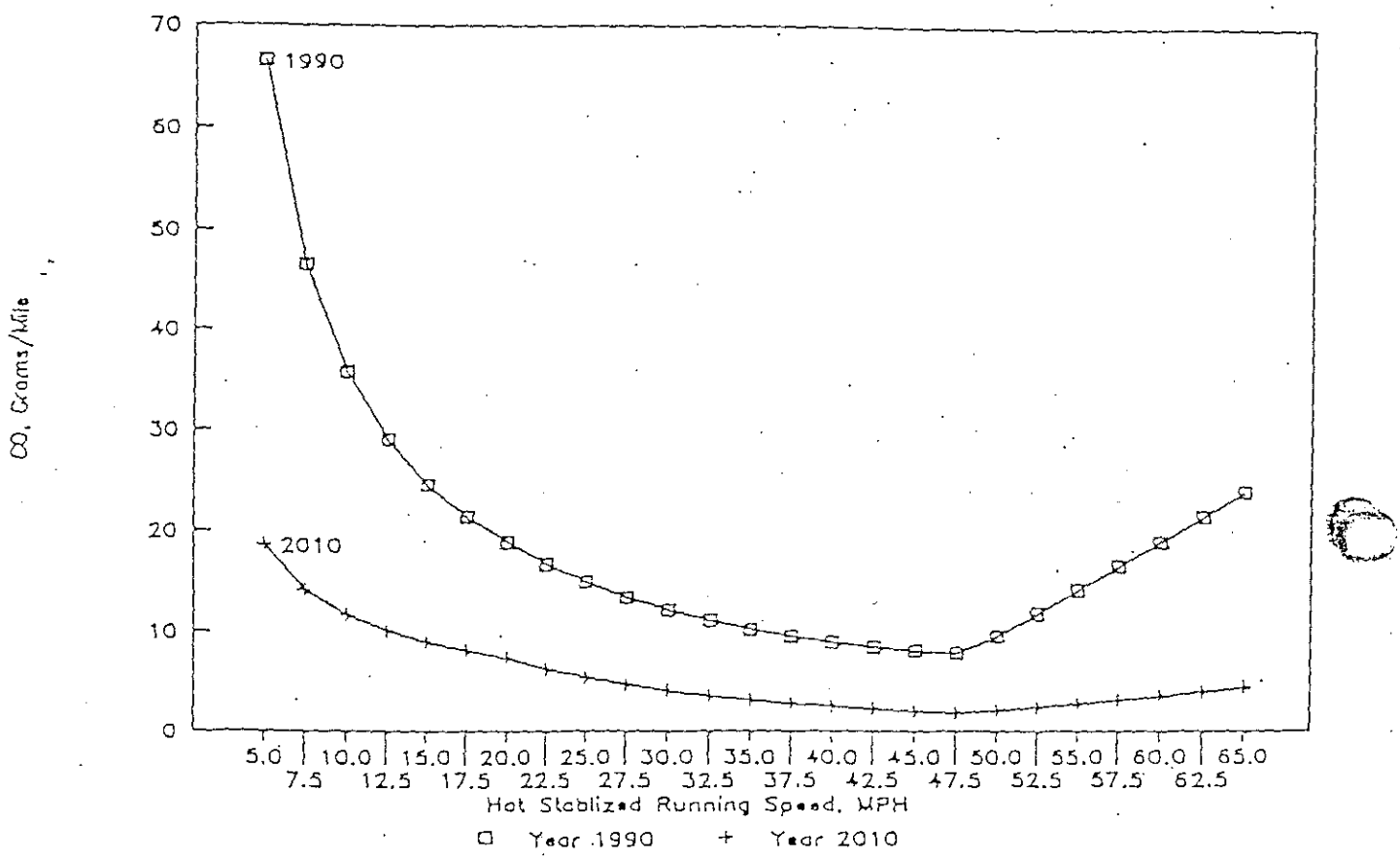
Contingency Plan Strategy

(To be implemented if base strategies fail to achieve expected results or if other unanticipated factors threaten compliance with air quality standards.)

Reformulated gasoline (to be implemented no sooner than 2005).	20.6 / 5.6
Congestion Pricing. (Regional full-scale application)	8.6 / 7.8

ATTACHMENT A6

Motor Vehicle CO Emission Rate Trend



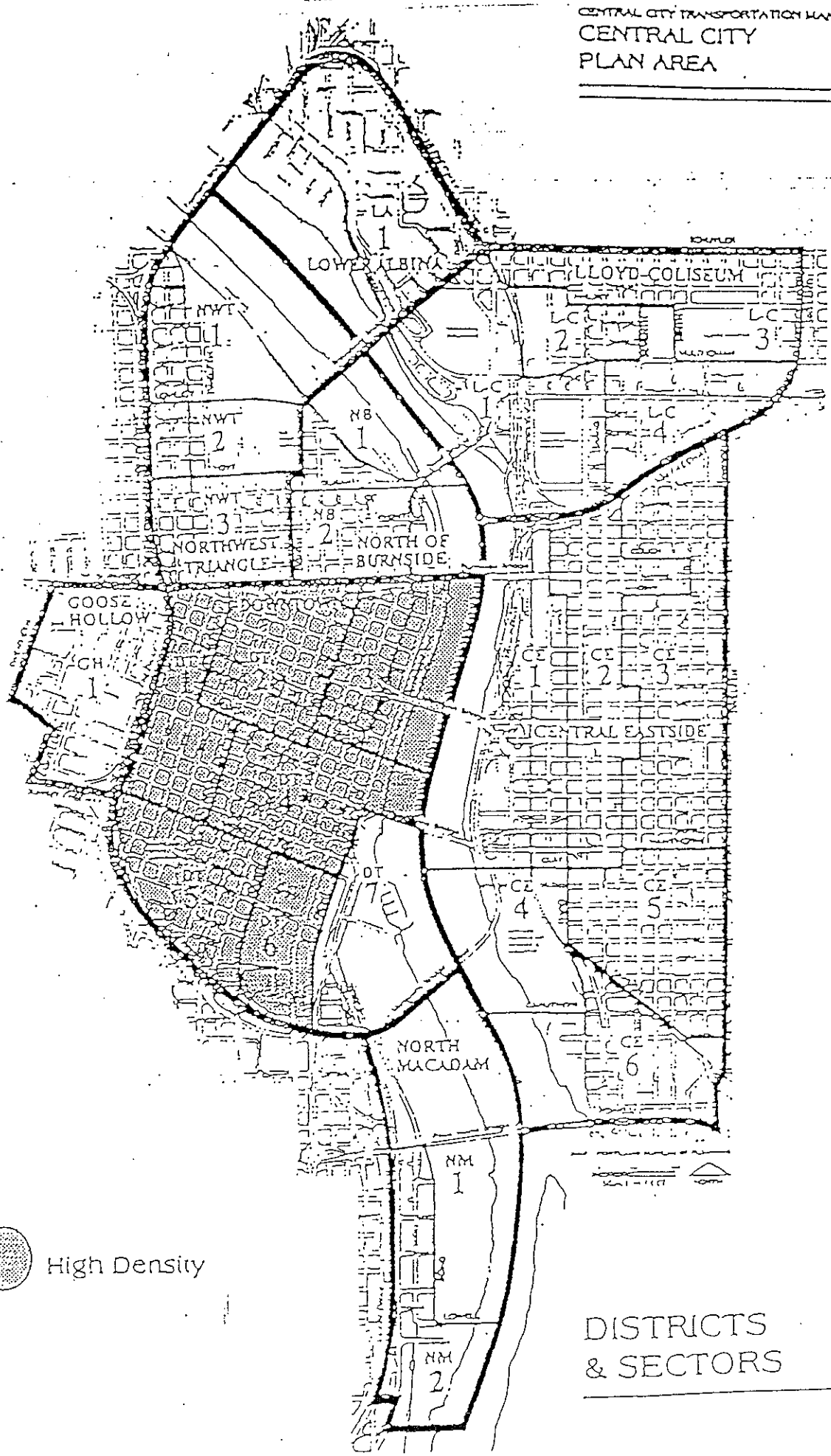
Note: Emission rates are based on EPA's MOBILE 4.1 model for composite vehicle.

Source: Portland CCTMP: Final Technical Analysis (December 1992)

ATTACHMENT A7

CENTRAL CITY TRANSPORTATION MANAGEMENT STUDY

CENTRAL CITY PLAN AREA



DISTRICTS & SECTORS

Map

ATTACHMENT A8

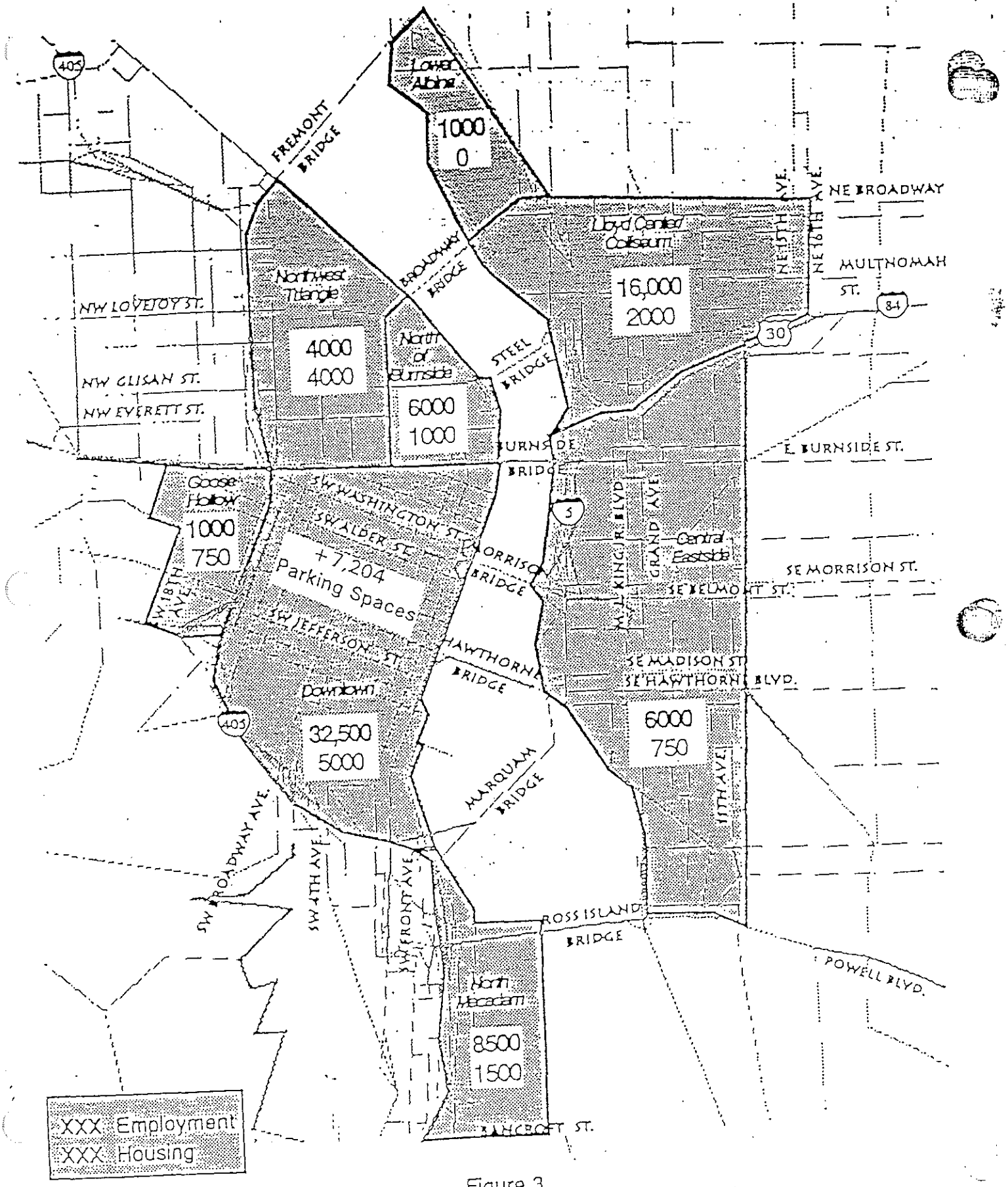


Figure 3
Estimated Employment and Housing Additions
for the High Growth Scenario 1990-2010

jhk & associates

ATTACHMENT A9

CCTMP Impact on Regional CO and Ozone Precursor Emissions

	Percent Change from 1990			
	Hydrocarbons		Nitrogen Oxides	
	2010 RTP	2010 High Growth	2010 RTP	2010 High Growth
Central City	1.08%	12.03%	-44.12%	-38.91%
Regional Total	6.20%	5.31%	-36.96%	-37.35%

Source: Portland CCTMP - Final Technical Analysis (December 1992)

ATTACHMENT A10

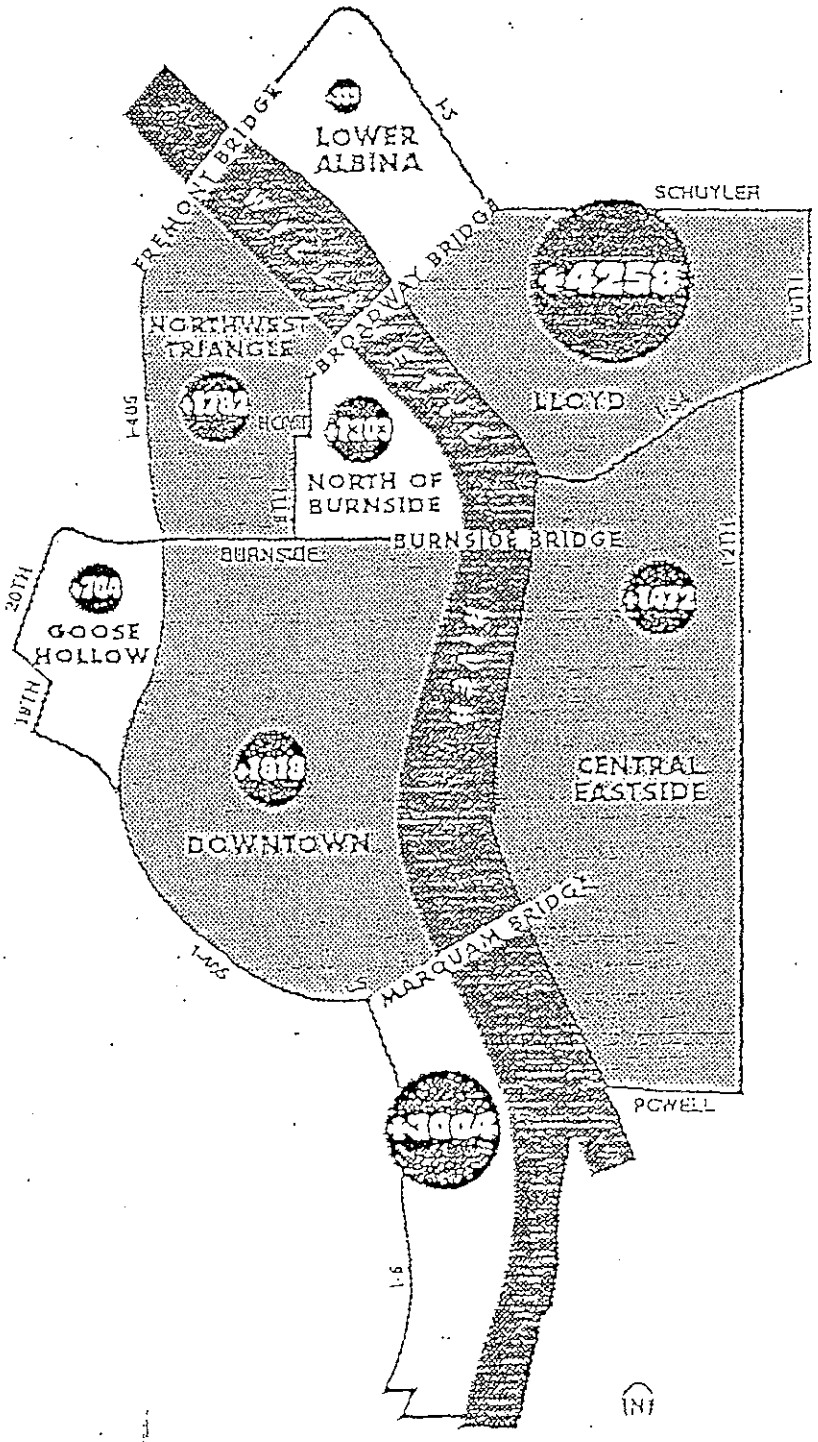
Past and Proposed Maximum Parking Ratios:
Application of Parking Ratios by Selected Districts and Sectors

DISTRICT/SECTOR	EXISTING PARKING RATIOS	MAXIMUM PARKING RATIOS
Downtown 2,3	0.7	0.7
Downtown 4	0.8	0.8
Downtown 1,5,6	0.9,1.0	1.0
North of Burnside 2	0.8,0.9	1.5
North of Burnside 1	0.9	2.0
Lloyd District	None	2.0
Northwest Triangle 3	1.0	2.0
Downtown 7	1.45	2.0
Central Eastside 2	None	2.0
Central Eastside 3	None	2.5
Goose Hollow	None	3.0
Central Eastside 1,4,5,6	None	3.0
Northwest Triangle 1,2	None	3.0*
North Macadam	None	3.0*
Lower Albina	None	3.0*

*Districts or sectors identified are assigned parking ratios of 3.0 spaces per 1,000 square feet. Additional parking for office use may be allowed upon submittal of a needs analysis.

Assuring Growth with Livability

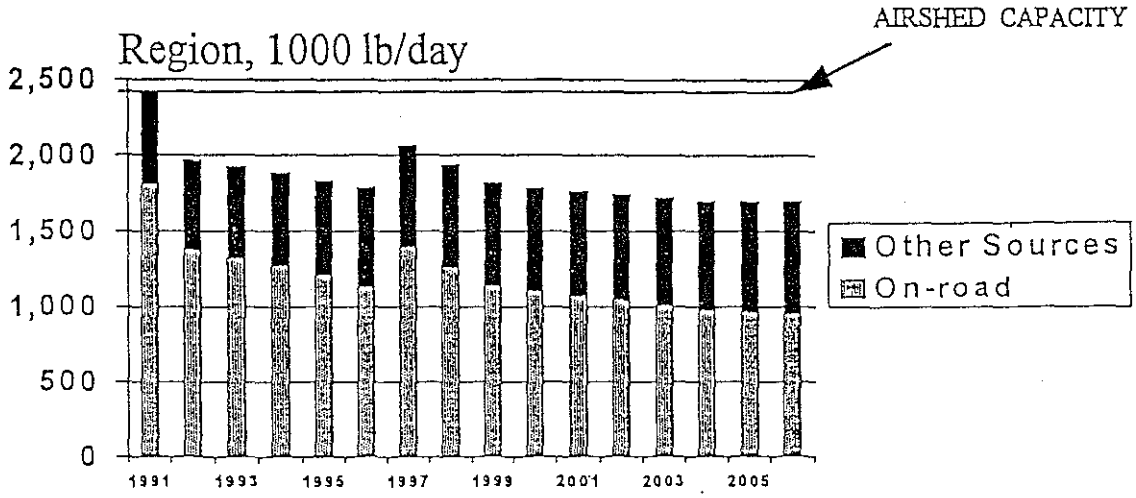
RUSH HOUR TRAFFIC INCREASE
HIGH GROWTH SCENARIO

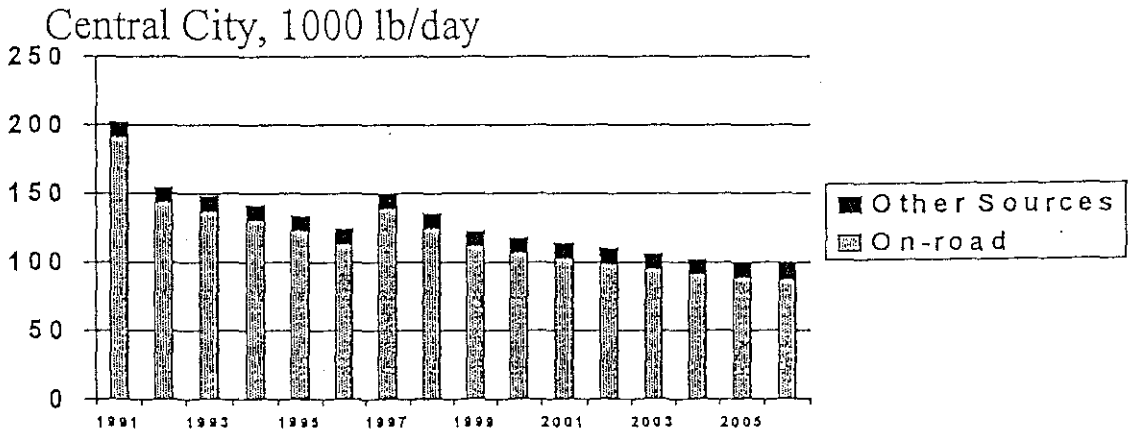


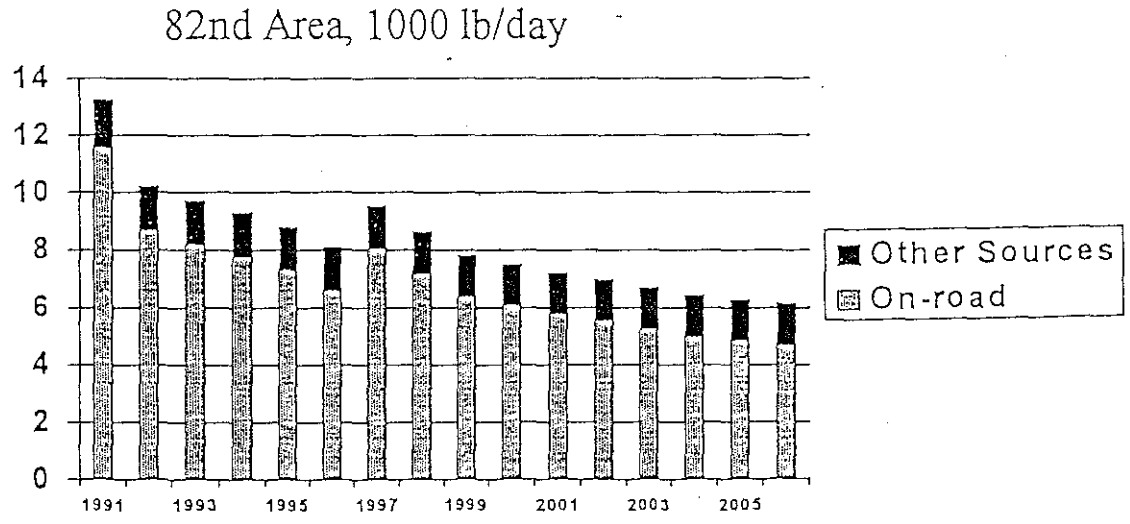
Central City Transportation Management Plan

CO Emission Budgets

(With the oxygenated fuel program ending after the 1995/1996 season)







Summary of Oxygenated Fuel Cost Impact Information Submitted to DEQ (1)

Revised 1/25/96

	Annual Cost	Equivalent $/gal
From Western States Petroleum Association		
Fuel Economy Loss (1.9% loss)	$4,404,200	
Wholesale Cost Increase (2)	$2,955,800	$0.016 (3)
Federal Subsidy	$7,750,000	
From Northwest Bio-Products Coalition		
Fuel Economy Loss (4)		
Producer Cost (5)		
Producer who does not modify subgrade	$380,815	$0.003 (6)
Producer who modifies subgrade	-$399,312	-$0.007 (7)
Federal Renewable Alcohol Excise Tax Exemption		$0.0 (8)

(1) Based on 183,968,547 gallons of gasoline sold from November 1994 through February 1995.
(2) Use $1.28/gallon cost for ethanol.
(3) Based on regular unleaded grade; WSPA indicated costs would not change significantly, or at all, if other grades were analyzed.
(4) Acknowledge EPA report of 1.9% loss but assert more than offset by lower gasoline prices in winter because of increased supply and lower demand.
(5) Use $1.25/gallon cost of ethanol. Subgrade modification reduces octane (cost) of base gasoline which is compensated for by higher octane of ethanol.
(6) Average cost of all grades (for regular grade only, cost was calculated at $0.014. Dollar amounts are based on estimated 31% market share for producer modified subgrade, Multnomah County year end 1994 fuel sales.
(7) Savings
(8) Net savings to the federal treasure indicated by September 14, 1995, report from the Resource Community Development Division of Government Accounting Office (95-273R); response to Senator Grassle, i.e., more planting of corn for ethanol production reduces farm subsidies.

State of Oregon
Department of Environmental Quality Memorandum

Date: April 12, 1996

To: Environmental Quality Commission

From: Langdon Marsh

Subject: Director's Report

Umatilla TMDL Process Uses Unique Approaches

Use of an advisory committee, chaired by Commissioner Lorenzen, and a watershed approach to Total Daily Maximum Load (TMDL) plan development highlight the process now underway in the Umatilla River Basin. State and federal natural resource agencies and the Umatilla tribes will conduct temperature monitoring while DEQ implements intensive sampling, flow and time of travel studies. DEQ staff begin spring survey work at the end of this month.

DEQ Plays Major Role in Salmonberry River Protection

Post flood repair work on a damaged rail line along the Salmonberry River caused major turbidity problems, but quick action by DEQ Northwest Region staff, the governor's office and other agencies prevented additional damage. This north coast tributary of the Nehalem River supports a valuable wild steelhead run which was just reaching spawning beds when the construction work began in mid March.

Based on recommendations from DEQ and ODFW, Governor Kitzhaber ordered a halt on rail repair work after April 1 and set strict stream protection guidelines for current and future construction work. The Governor has appointed a special taskforce to review the future of this railroad operated by the Port of Tillamook.

DEQ lab staff have set up hydrolab units and monitor them three times per week to assess river turbidity. DEQ staff will also conduct surveys this month to assess damage to aquatic life in the river and inter-gravel dissolved oxygen levels in steelhead spawning reds.

Governor Honors DEQ Employees for Flood Assistance

DEQ region and headquarters staff did their assigned jobs efficiently and effectively during the flood emergency. But that is not all. Many staff also put in hours of volunteer service to people and organizations in need, including such activities as placing sandbags at the North Portland Sewage Treatment Plant -- helping prevent major damage there. Several staff received personal letters of recognition from Governor Kitzhaber for their individual acts.

Times of crisis can bring out the best in people. That was certainly the case at DEQ. We should all take pride in agency employees display of professionalism, creativity and commitment to their communities.

Flood Did Not Cause High Toxic Load in Willamette River

A Willamette River monitoring run performed the week following the flood collected 19 samples from Harrisburg to the Columbia River. The samples were subjected to a fairly thorough toxics screen (metals , solvents, herbicides, insecticides and hazardous waste chemicals) in addition to our routine water chemistry. All the toxics work indicated non-detect for everything (detection levels were between 1 and 0.1 parts per billion depending on the chemical).

Upper Willamette Valley and Southwest Oregon Community Visits Planned

I will be on the road April 17-19 visiting communities and DEQ offices in the upper Willamette Valley and southwest Oregon. Western Region DA Steve Greenwood has put together an ambitious schedule that will allow me to share DEQ's message and listen to people's ideas and concerns. The trip will involve meetings with civic, business and environmental people as well as agency staff and the media in some areas. Over the course of three days I plan to visit Eugene, Cottage Grove, Coos Bay, Charleston, Bandon, Langlois, Brookings, Medford, White City, Roseburg and Merlin.

Columbia River Study Identifies Toxic Waste Concerns,
NEP Designed to Address Findings

In 1990, DEQ joined with its Washington State counterpart, several federal agencies, academic experts and Columbia River tribes in a multi-phase project to study the overall health of the Columbia River from Bonneville Dam to the mouth. The "Bi-State Study " looked at a variety of issues and potential concerns ranging from presence of toxic substances to potential impacts of these chemical contaminants on the fish and wildlife which use the river during all or part of their life cycles.

Study findings are nearly complete. A draft study report raises serious concerns about the effect of certain chemical contaminants on mink and river otter populations in the lower river and identifies concentrations of contaminants in the bodies of both resident and migratory fish using the river. Chemical contamination levels in fish has prompted an Oregon Health Division review of potential human health impacts. We expect a Health Division report sometime this spring

The study was not initiated just to find potential or actual problems. The overall goal is to develop both short and long-term solutions for these problems. A special steering committee comprising a variety of interests and fields of expertise is now working on the last program phase which will include action recommendations.

These recommendations will be provided to the Lower Columbia National Estuary Program, a joint Oregon,Washington and federal effort, which will prepare a comprehensive conservation

and management plan over the next three years. Governor Kitzhaber and I will help kick off this new program on May 23 in Vancouver, Washington, along with EPA Administrator Carol Browner, Fred Hansen and EPA water administrator Bob Perciasepe. The plan with include both early action and longer term recommendations.

EPA Performance Partnership

In May, 1995, EPA officials and state environmental directors launched the National Environmental Performance Partnership System (NEPPS), a revolutionary approach to boost the power of state environmental agencies through innovative mutual agreements. EPA considers the NEPPS as the principle vehicle for "devolving" federal oversight of state implemented programs. Under the NEPPS, states and EPA make commitments to be equal partners in achieving a host of environmental goals and objectives through execution of the Performance Partnership Agreement (PPA).

A few states have already entered into the PPA: Colorado, Illinois, Delaware, New Jersey, and Utah. These states included all media in their agreements (air, water, hazardous waste, etc.). Oregon has begun negotiations with EPA Region 10 to enter into a PPA commencing July 1, 1996 for FY 97; however, the Oregon PPA will cover only water quality programs. At a recent meeting, DEQ and EPA Region 10 officials agreed upon a list of water quality program priorities to set the stage for developing the PPA. These include: watershed approach, salmon recovery, water quality standards, pollution prevention, nonpoint source pollution, groundwater protection, technical assistance, program measures and indicators, and streamlined permitting. The next steps are to develop a joint work plan (including identifying resources both agencies can contribute to achieving objectives), and determining meaningful measures of outcomes (environmental indicators). Opportunities for public input into the PPA will be provided through public notices and EQC hearing.

DMV Tags To Be Sold At All Test Stations

As of April 22, Portland area motorists will be able to purchase their (DMV vehicle registration tags when they have their motor vehicles certified at all seven test stations in the region. With this new program in place, motorists can now avoid making two separate trips (to DEQ, then DMV) when their vehicle registrations expires. This new service began in February as a pilot project at two DEQ test stations.

DEQ has offered DMV registration renewal at the Medford area vehicle test station since November, 1992. In 1995, more than 40 percent of DMV registration renewals were processed by DEQ at the Medford test station.

Coastal Salmon Restoration Planning Continues

DEQ remains an active participant in the Governor's Coastal Salmon Restoration Initiative planning process. Multi-agency information sharing and cooperation remains very good. The Governor continues to emphasize his commitment to this work and expects the same from involved agencies.

The framework for a restoration plan is beginning to take form now. Each agency is coming forward with details about what its programs can contribute to coastal salmon. DEQ is now developing a workplan that will outline how the agency expects to implement salmon-related programs and projects. Some of these are now-doables, but others may be part of a governor-sponsored budget package for the 97-99 biennium.

DEQ and EPA Join Forces to Complete 303(d) List

Internal review continues for about 400 public comments on the draft 303(d) list of water quality limited streams. EPA staff are now assisting in comment review to help move the process along. In addition, DEQ staff are developing a matrix, covering 18 individual river basins, which clearly shows data sources and reasons for listing or not listing a stream or stream segment. Discussions also continue with various stakeholders to clarify concerns and, where possible, resolve outstanding issues.

Hazardous Waste Audit Report Expected Soon

The Secretary of State's office is expected to release their final report on the Hazardous Waste Management audit by the end of this month, although we have no specific date at this time. Opportunities to review the draft audit and discuss issues with the audit division have been useful. We are preparing our final response to the audit now. That will likely be released through the Secretary's office along with the audit report.

State of Oregon

Department of Environmental Quality Memorandum

Date: April 12, 1996

To: Environmental Quality Commission

From: Langdon Marsh, Director

Subject: Agenda Item H, Budget Development, EQC Meeting of April 12, 1996

Statement of Purpose

Information on DEQ's budget request process for the 1997-99 budget cycle

Background

The Department of Environmental Quality has been growing steadily over the past 10 years. Most of the growth has been due to new programs created at both the national and state level.

Because of ballot measures that required state general fund money to be used more for common school support; state initiatives to build more prisons; initiatives to impose more stringent and long prison terms; and decreased lottery revenues because of competition, less general fund revenue has been available for natural resource agencies such as DEQ.

Over the past decade, DEQ has made up for these general fund reductions, and for the demands of new programs by crating new or increased fees. The percentage of DEQ's budget supported by fees and similar other fund revenues has gone from 46% in 1985-87 to 68% in 1995-97. Federal dollar support has remained relatively flat.

Budget Development for 1997-99

During the budget development process for 1977-99 the agency will be required, as will all other agencies, to provide general fund program reduction alternatives of 10%. These reduction options will not necessarily be selected by the Department of Administrative Services for cuts, but could be. The Department is now developing budget options, possible requests for additional resource, and possible shifts of existing resources to highest priorities. We are also working with the other natural resource agencies to see if joint efforts in developing budget packages covering areas of mutual concern can be created.

Budget development is very preliminary at this stage. We will continue to provide the Commission information as this process continues.

Department Recommendation

It is recommended that the Commission accept this report, discuss the matter, and provide advice and guidance to the Department as appropriate.

Attachments

Several charts and graphs of the state's natural resource agency current budgets, as well as DEQ specific information are attached.

Approved:

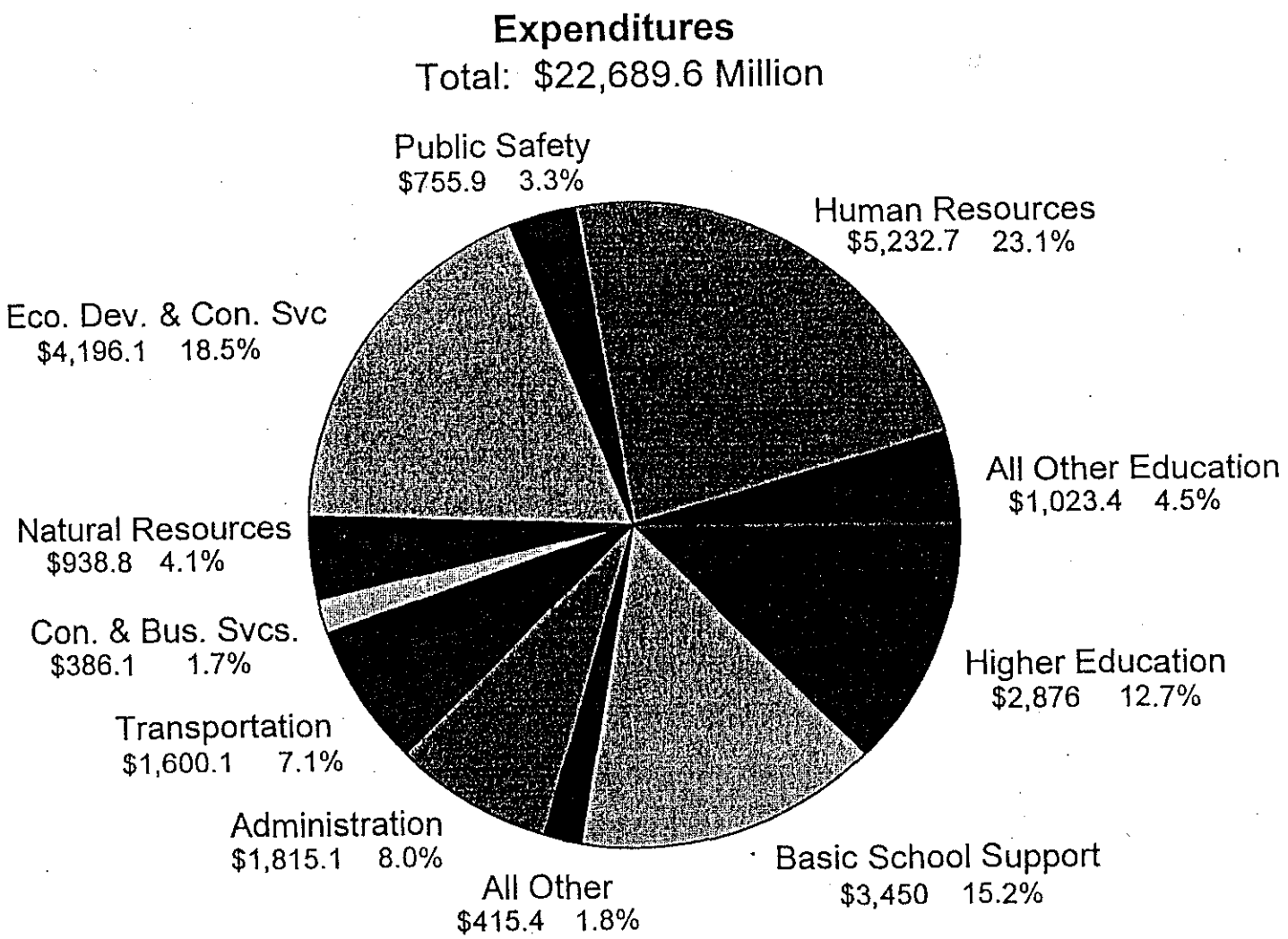
Section: Lydia Taylor

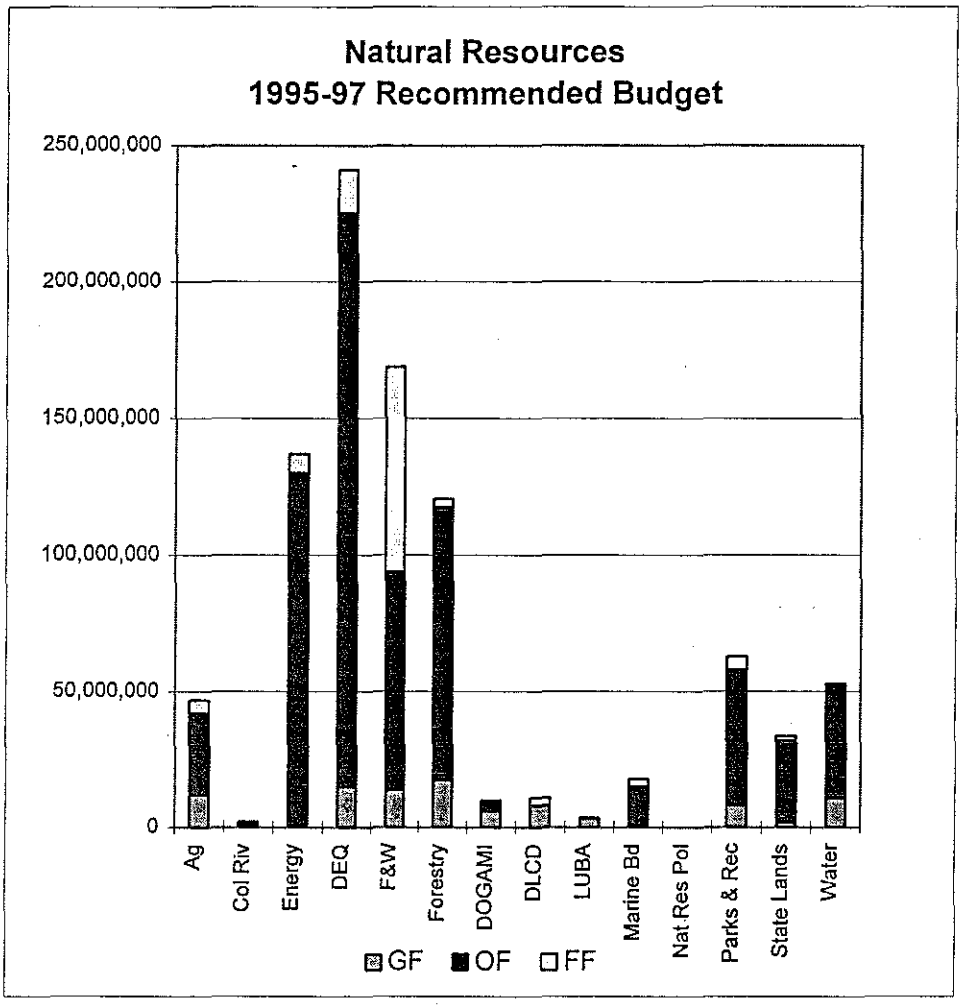
Division: _____

Report Prepared By: Lydia Taylor

Phone: 229-6110

Date Prepared: 4-11-96

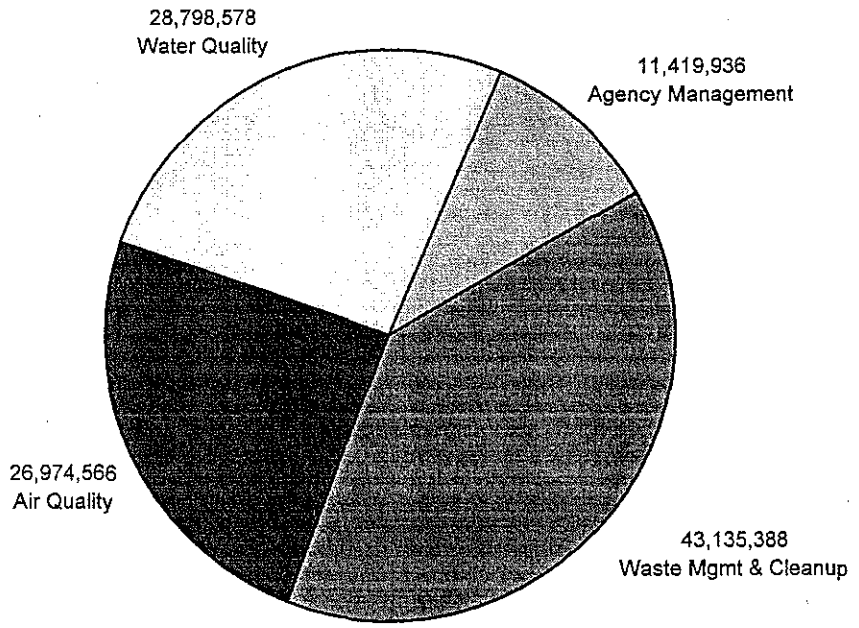

Expenditures
Total: $22,689.6 Million
Public Safety
$755.9 3.3%
Human Resources
$5,232.7 23.1%
Eco. Dev. & Con. Svc
$4,196.1 18.5%
All Other Education
$1,023.4 4.5%
Natural Resources
$938.8 4.1%
Con. & Bus. Svcs.
$386.1 1.7%
Higher Education
$2,876 12.7%
Transportation
$1,600.1 7.1%
Administration
$1,815.1 8.0%
Basic School Support
$3,450 15.2%
All Other
$415.4 1.8%



Natural Resource Agencies General Fund 1.23% of total General Fund Revenues

X:\DALE\LTAYLOR\NAT_RES.XLS
Prepared by Dale Chipman
4/11/96

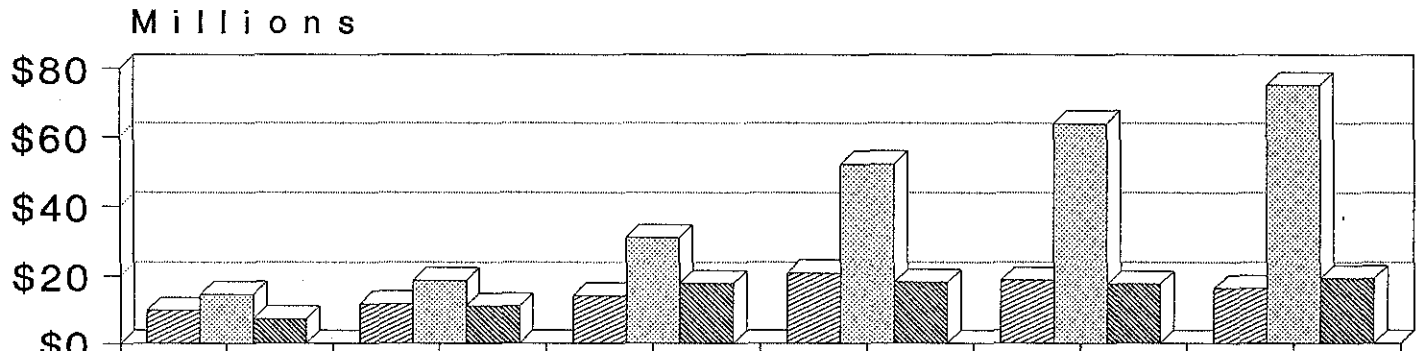
Department of Environmental Quality
1995-97 Net Operating Budget
$110,328,468



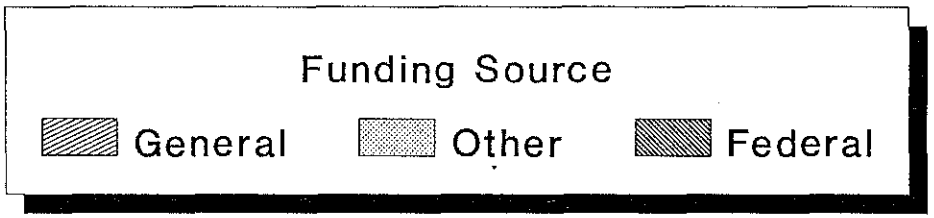
Excludes Debt Service, Non-Limited Expenditures and Cleanup. These excluded categories total $132,367,638 in limitation.

DEQ NET OPERATING BUDGET

Dollar Comparison by Fund



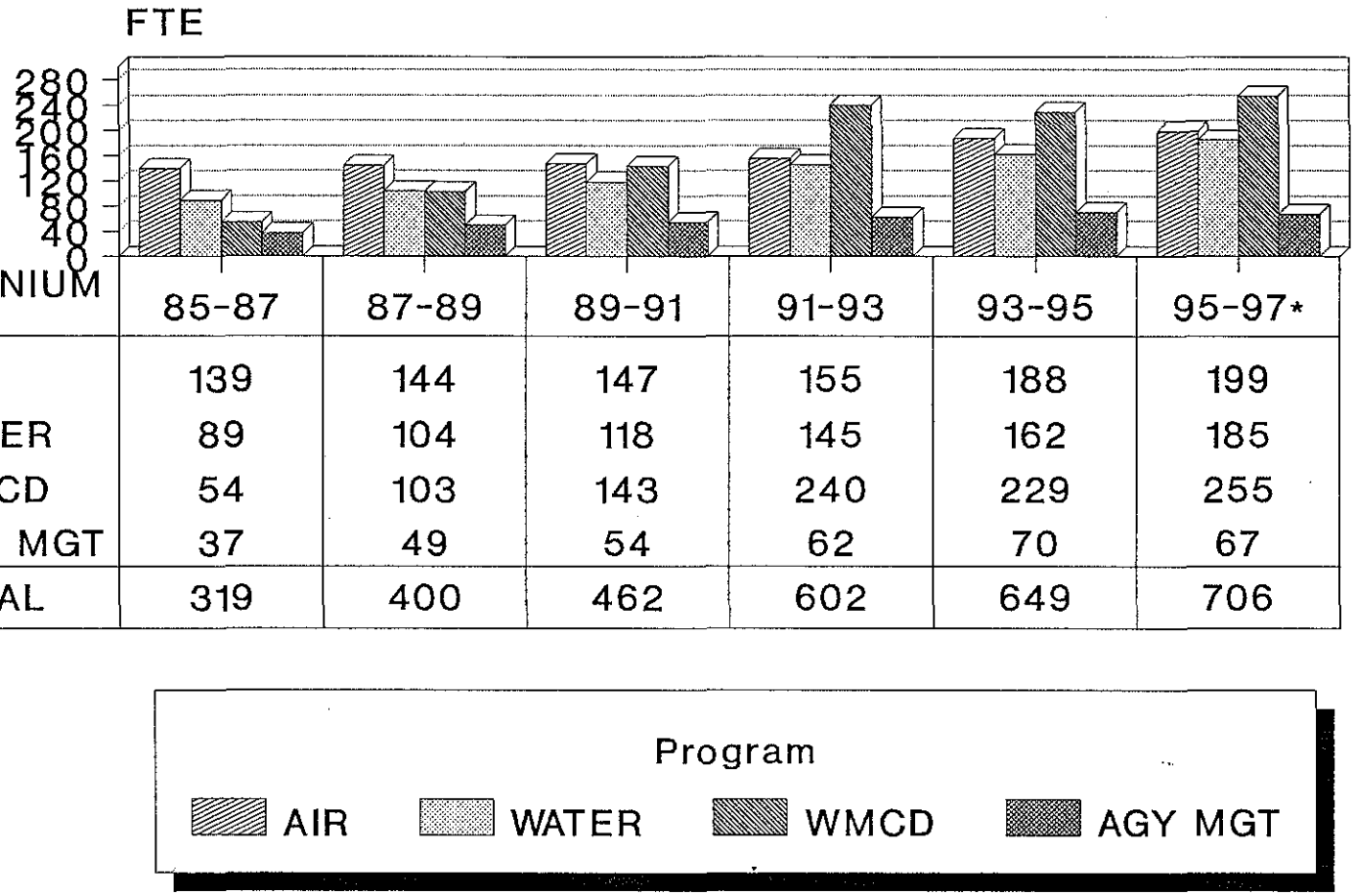
BIENNIUM	85-87	87-89	89-91	91-93	93-95	95-97*
General	$9.728	$11.695	$14.052	$20.714	$18.614	$16.242
Other	$14.435	$18.515	$30.839	$52.061	$63.705	$74.954
Federal	$7.197	$11.018	$17.674	$18.049	$17.527	$19.133
Total	$31.359	$41.228	$62.565	$90.824	$99.846	$110.328



Net Operating Budget excludes
UST Financial Payments and Cleanup Costs

*95-97 Legislatively Approved Budget

DEQ NET OPERATING BUDGET
FTE by Program



BIENNIUM	85-87	87-89	89-91	91-93	93-95	95-97*
AIR	139	144	147	155	188	199
WATER	89	104	118	145	162	185
WMCD	54	103	143	240	229	255
AGY MGT	37	49	54	62	70	67
TOTAL	319	400	462	602	649	706

*LEGISLATIVELY APPROVED BUDGET

file:perftea.cht updated:4/11/96

State of Oregon

Department of Environmental Quality — Memorandum

Date: April 12, 1996

To: Environmental Quality Commission

From: Langdon Marsh

Subject: Legislative Concepts

Background

The Department is developing its concepts to present to the 1997 Legislature. Many of the proposed concepts have been, or are in the process of being developed with the help of an advisory committee. Others fall into a category of housekeeping or efficiency measures that are been developed by Department staff. The draft concepts are presented here for Commission review and comment.

The schedule for consideration of legislative concepts is a tight one. The governor's office has established the period of April 15 to May 31, 1996 for the Department or Administrative Services (DAS) and the Governor's office to review legislative concepts from agencies. The DAS will ensure the legislative concepts are coordinated with the budget process.

Once concepts are reviewed and approved by the Governor's policy staff, they are forwarded to Legislative Counsel for drafting. Legislative Counsel must receive the bills by August 1, 1996. Draft legislation must be submitted to DAS for final review and Governor's approval by December 2, 1996. Presession filing must occur by December 16, 1996 for the 1997 legislative session.

During the review period, the Department will continue working with advisory committees to refine the proposals. The Department will incorporate changes recommended by the Commission or the Governor. Only those concepts approved by the Governor will move forward. Our goal is to foster a general consensus on each of these concepts before the legislative session begins.

DEQ Draft Legislative Concepts

Program and Policy Initiatives

Water Quality

Rural Oregon Technical Assistance Account

Establish a special fund to assist small communities and individuals to comply with environmental requirements. The fund would provide technical assistance to Communities under the EPOC program, assist local governments in their wellhead and groundwater management plans, and pay for pollution control facilities or practices related to the Water Quality Limited (303d) list.

SRF For Nonpoint Source Pollution

Remove the restriction that State Revolving Fund loans only be made to public entities for projects that are publicly owned.

On-Site Additive Products Registration

Require registration and proof of safety and efficacy for additive products sold to users of on-site sewage disposal systems. Use the model recently developed by the State of Washington.

Waste Management and Cleanup

Underground Tank Efficiencies and Fee Increase

Adopt a new strategy and long-term approach for the tank program. Develop a new approach for closing low risk sites. Increased funding could come from increasing the tank fee and license fee for tank service providers.

Toxic Use Reduction Program and Fee Changes

Modify Toxic Use Reduction Law and change fee to source something other than Fire Marshal's hazardous substance fee.

Recycling Program Modification

Change state law in the following areas: 50% recovery goal, local recycling program elements and recovery rates, commercial recycling, recovery rate management and reporting, markets development, education, recycled content and plastics recycling requirements and determination of compliance.

Spill Prevention and Response Improvements and Fee Increase

Require geographic response plans for inland river basins, modify plan for Newport and Coos Bay, expand fish and wildlife rehabilitation requirements and clarify responsibilities in approving spill contingency plans. Increase fees to provide for additional spill staff, volunteer training and spill prevention training for vessel operators.

Orphan Site Funding and Program Modification

Change funding source and modify program to encourage private party participation in cleanups.

Drycleaner Law Modifications

Amendments are needed to address inconsistencies and to clarify broad language in the statute.

Air Quality

Golf Cart Exemption for Vehicle Test

Exempt golf carts and all terrain vehicles from emissions testing. DMV will not issue registrations unless they have a DEQ certificate. We do not have facilities to test golf carts.

Excess VOC Fee

Provide authority to ban aerosol spray products such as hair spray and deodorants and paints with high volatility, or require an excess VOC fee for those products. The money would be used to offset the air quality impact from those products by funding programs such as Employee Commute Options or a car scrappage program.

General

Pollution Prevention

Provide package of incentives for pollution prevention activities.

New and Increased Fees

Fee For MAO

Give the Environmental Quality Commission authority to establish a fee schedule for a Mutual Agreement and Order. The schedule would help offset Department and Attorney General costs involved in negotiating and drafting MAOs.

Fee For Fill & Removal 401 Certifications

Give the Environmental Quality Commission authority to establish a graduated fee based on the size of the project. For large projects (such as Hyundai) the fee would be the same as we collect for hydro projects. No fee would be charged for a small wetland fill. Staff time could be charged against the fee with a refund provided for any remaining balance.

Modify Vehicle Test Fee

Modify the fee requirement to allow collection of a fee for each vehicle test performed. Currently a fee is charged only when the Certificate of Compliance is issued, cars that fail the test are not charged. DEQ may wish to charge on a per test basis in whole or in part for the new enhanced test.

Increase Hazardous Waste Fees

Increase fees for certain time-consuming activities such as TSD permitting and modification, corrective actions, and recycling determinations. Expand the fee to new groups now receiving work from DEQ that was not accounted for when fees were last modified.

Increase the Variance Application Fee

Increase the fee to apply for a variance to on-site rules to cover Department costs.

Emergency Fee Waivers

Give the Environmental Quality Commission authority to waive fees established by the Legislature in cases of emergency such as a flood. The fee waiver would be granted on a case by case basis.

Water Quality Funding and Incentives

Water Quality Program Funding

Proposal in coordination with Water Resources, Agriculture, Forestry for funding projects and staff needed by all agencies.

Tax Credits for Nonpoint source Practices

Provide tax credits for nonpoint source pollution control facilities and activities.

Efficiencies and Housekeeping

- **Ten Year WPCF Permits**
  Remove the requirement for five year renewal for Water Quality WPCF permits. The current renewal time is five years. Require review at certain periods with possible reopener when needed. Assess a fee for review to make the proposal revenue neutral.
- **Eliminate Requirement for Surety Bonds**
  Surety Bonds are now required for certain small wastewater collection and treatment systems such as mobile home parks. The current bond level is too low to be effective and the bonds are difficult or impossible to obtain.
- **Eliminate Noise Statues**
  Eliminate noise and other statutes we are no longer enforcing
- **On-site Program House Cleaning Amendments**
  Delete and review certain elements in the law that are not needed and cause confusion.
- **Plan Review**
  Reduce DEQ oversight and review requirements related to municipal and industrial waste water facility plans.