EQC Meeting 1 of 1DOC 1997 06 05

OREGON ENVIRONMENTAL QUALITY COMMISSION MEETING MATERIALS 06/05/1997



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AGENDA

ENVIRONMENTAL QUALITY COMMISSION MEETING

June 5, 1997

DEQ Conference Room 3A 811 S. W. Sixth Avenue

orro. w. Sixtii Avenue

Portland, Oregon

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 **3:00 p.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.



The Commission will have lunch at 12:00 noon. No Commission business will be discussed.

The meeting will begin at 1:00 p.m.

- A. Approval of Minutes
- **B. Approval of Tax Credits**
- C. Action Item: Petition for reconsideration Regarding EQC Approval of Umatilla Chemical Depot Permit for the Treatment and Storage of Hazardous Materials and Air Contaminant Discharge Permit
- D. **†Rule Adoption**: Adoption of Attorney General's Model Rules
- E. **†Rule Adoption**: Adoption of Amendments to the On-Site Sewage Disposal Rules and **Temporary Rule Adoption**: On-Site Holding Tank Temporary Rule
- F. **†Rule Adoption**: Modification of OAR 340-41-120(12) Effluent Limitation for Bacteria to Allow Reduced Monitoring for Bacteria for Smaller Sewage Treatment Plants

G. Commissioners' Reports

H. Director's Report

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 July 17-18, 1997, for their next meeting. The location has not been established.

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.

May 15, 1997

Approved _____ Approved with Corrections _____

Minutes are not final until approved by the EQC

Environmental Quality Commission February 7, 1997 Special Telephone Conference Call Meeting

The Environmental Quality Commission special telephone conference call was convened at 2:30 p.m. on Friday, February 7, 1997. The following Commissioners were connected for the call:

Henry Lorenzen, Chair Carol Whipple, Vice Chair Melinda Eden, Member Linda McMahan, Member Tony Van Vliet, Member

Also present at DEQ headquarters, 811 S.W. Sixth Avenue, Portland, Oregon, were Langdon Marsh, Director, DEQ, and DEQ staff members. In addition, telephone connections to the conference call were available at the DEQ Bend office and the DEQ Hermiston office. Staff from EPA Region X in Seattle and the U.S. Army also had audio access to the call.

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 Lorenzen confirmed that all Commissioners were on the line for the conference call and called the meeting to order at 2:30 p.m.

Action Item: Issuance of Findings and Permit Decisions for Umatilla Chemical Depot

Brett McKnight, Manager of Eastern Region's Hazardous Waste and Cleanup section, introduced the item to the Commission. At the November 22, 1996 meeting held in Pendleton, the Commission heard final briefings from the Army and Department staff. At this meeting the Commission deliberated the issues and discussed public concerns as reflected in public testimony and comment. The Commissioners reached consensus that incineration, as proposed in the Army's hazardous waste treatment permit application, represents the best available technology. The Commission determined at that time that the remaining statutory findings could be made and directed Department staff to prepare a final hazardous treatment permit with additional and modified conditions and technical corrections.

Mr. McKnight provided a summary of Public Comments and the Department's response to those comments (entered into the record as Appendix 3). He noted several minor typographical errors that required correction. The administrative record for the permit, including originals of public comments, will be kept at the Department's Eastern Region office in Bend at 2146 NE 4th, Suite #104, Bend, Oregon, 97701.

In response to the previous directive from the Commission, Mr. McKnight recommended that the Commission adopt the following modification to the language in Part 4 of the final order, (*changes in italics*) to read :

4. "The Commission shall issue the hazardous waste treatment permit to the United States Army containing the terms and conditions agreed upon by the Commission as of the date of this Order, *including those additional permit conditions specifically ordered by the Commission as reflected in Attachment A to Appendix 3 which is incorporated herein.*"

The additional permit conditions were those requested by the Commission at the November 22, 1996 meeting and included changes to:

- Storage Risk Modification to the opening statement of the permit introduction found on page 3
- Chemical Stockpile Emergency Preparedness Permit Conditions
- Removal of Umatilla Chemical Disposal Facility Structures at Closure Permit Conditions
- Pollution Abatement System Carbon Filter Unit and Emission to the Carbon Filters Permit Conditions
- Emergency Operations Center Positive Pressure Permit Conditions
- Army Assurance of Independent Oversight Permit Conditions
- Shutdown Conditions Permit Conditions

Environmental Quality Commission Telephone Conference Call Minutes February 7, 1997 Page 3

- Liability Issue Permit Conditions
- Bad Weather Conditions Permit Conditions
- Baseline Monitoring Permit Conditions
- Off-Site Waste Prohibition Permit Conditions
- Permit Opener Permit Conditions

Following a discussion of the proposed revisions to the permit, Commissioner Eden moved to adopt the findings and conclusions as recommended by the Department and incorporating the additions in Appendix 3, Attachment A. Commissioner Van Vliet seconded the motion. Director Marsh took a roll call and the motion was approved with five "yes" votes.

Commissioner Van Vliet moved to authorize Chair Lorenzen to execute the Permit on behalf of the Commission, and to authorize Director Marsh to execute on behalf of the Department. Commission McMahan seconded the motion as it was unanimously approved.

Commissioner Eden moved to authorize Chair Lorenzen to sign the Final Order on behalf of the Commission. Commissioner Van Vliet seconded the motion and it was unanimously approved.

Chair Lorenzen expressed his appreciation to fellow Commissioners and Department staff for their efforts in the permitting process.

There was no further business and Chair Lorenzen adjourned the meeting at 3:15 p.m.

Approved _____

Minutes are not final until approved by the EQC

Environmental Quality Commission Minutes of the Two Hundred and Fifty-Eighth Meeting

February 28, 1997 Regular Meeting

The Environmental Quality Commission meeting was convened at 9:00 a.m. on Friday, February 28, 1997, at the Department of Environmental Quality, 811 S.W. Sixth Avenue, Portland, Oregon. The following members were present:

> Henry Lorenzen, Chair Melinda Eden, Member Linda McMahan, Member Tony Van Vliet, Member (Vice Chair Carol Whipple was not present)

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 Lorenzen called the meeting to order at 9:00 a.m.

A. Approval of Minutes

Commissioner Van Vliet moved to approve the minutes from the following meetings:

November 22, 1996 Special Session December 31, 1996 Telephone Conference Call January 9, 1997 Work Session January 10, 1997 Regular Session

Commissioner McMahan seconded the motion and it was approved with four "yes" votes.

B. Approval of Tax Credits

Maggie Vandehey with the Department's Management Services Division presented this item to the Commission. The Department recommended the Commission approve certification for the following tax credit applications:

Applications for Pollution Prevention Pilot Program: Air Quality

All equipment is used in the normal course of doing business. However, the owners would not have replaced their existing systems at this time or with this particular equipment had it not been required by the National Emission Standards for Hazardous Pollutants (NESHAP) and to avoid monitoring and record-keeping requirements.

				Fercent
TC No.	Applicant	Description	Cost	Allocable
4712	Lyle & Rosalie Nelson, LLC	New multiprocess wet cleaning system installed as a <u>replacement</u> for one of two percloroethylene dry cleaning machines which vented emissions to the atmosphere during the drying cycle.	\$39,200	
4617	Newport Dry Cleaners	New non venting dry-to-dry percloroethylene dry-cleaning machine installed as a <u>replacement</u> for a perc dry-to-dry machine which vented emissions to the atmosphere.	\$55,143	
4718	West 11 th Laundry and Cleaners, Inc.	New non venting dry-to-dry percloroethylene dry-cleaning machine installed as a <u>replacement</u> for a perc dry-to-dry machine which vented emissions to the atmosphere	\$29,500	
		Total Prevention	\$ 124 843	

Total Prevention \$ 124,843

Percent

Applications for Pollution Control Tax Credit

Other Division 16

4672	David R. Briggs ¹	AQ: Field Burning. Like-for-Like	\$121,293	52%
		Replacement of John Deere 2810 7-Bottom		
		plow. New John Deere 8400 225 hp tractor.		
		Used to plow, harrow and flail as an		
		alternative to open field burning.		

Total Pollution Control \$121,293

1 See Certificate Revocation

In addition, the Department recommended revocation of the following certificates:

• David L. Briggs' Pollution Control Tax Credit Certificate #2856 to coincide with the approval of tax credit application #4672

 ELF Atochem North America, Inc.'s Pollution Control Facility Certificate #2740

Commissioner McMahan moved approval of the tax credits and revocations as recommended by the Department. Commissioner Eden seconded the motion, and it was passed with three "yes" votes and one "no" vote (Commissioner Van Vliet).

Ms. Vandehey and the Commission discussed the three requests for extension of time to file submitted by Willamette Industries, Inc. (Willamette's South Valley Project #185, Willamette's Duraflake Project #239 and Willamette's Albany Paper Mill Project #94-20). Commissioner Eden moved to approve the Department's recommendation to deny the extensions. Commissioner McMahan seconded the motion and it was unanimously approved.

- C. Action Item: Revocation and Request to Decommission Permit No. 95-014 - John M. Compton (This item was withdrawn prior to the Commission meeting)
- D. Action Item: Variance Application of Mr. and Mrs. Stephen Wilkins (This item was withdrawn prior to the Commission meeting)
- E. Rule Adoption: Permanent Rule Making for the On-Site Sewage Disposal Systems in the Clear Lake Watershed in Lane County

Steve Greenwood, Western Region Administrator and Barbara Burton, Western Region Water Quality Manager, presented this item to the Commission. An on-site sewage system moratorium was in effect in the Clear Lake Watershed from 1983 until October, 1996. The moratorium was intended to prevent further development until such time as a watershed management plan could be implemented that would protect water quality in Clear and Collard Lakes. In response to a court order, the Commission lifted the moratorium through temporary rules in October, 1996. The proposed rulemaking would provide changes that would permanently lift the moratorium.

The Department discussed its plans to periodically monitor Clear and Collard Lakes, and said further action would be considered if there were significant degradation of water quality. Ms. Burton also discussed monitoring the phosphorus levels in the lake, and reviewed the status of research about phosphorus and its effect on water quality.

Commissioner Van Vliet asked what regulatory tools were available to the Department for lake protection. Commissioner McMahan asked if there was a

system in place for monitoring water quality degradation before it became a serious problem. The Commissioners discussed possible methods of granting the Commission authority to take appropriate action before contamination occurred. The Commission directed Ms. Burton and the Department to review the language in the proposed rule to include Departmental authority to assure sewage collection and off-site treatment facilities could be installed if results of groundwater monitoring indicated unacceptable levels of degradation. Chair Lorenzen asked the Department to return with draft language for consideration later in the meeting.

Note: The following agenda items were taken out of order

L. Transfer of Field Burning Program to the Department of Agriculture

Steve Greenwood, Western Region Administrator, introduced this item to the Commission. The Department recommended that the Commission review and approve the Memorandum of Understanding transferring the field burning program to the State Department of Agriculture on June 16, 1997, and designate the Director of the Department of Environmental Quality to sign the memorandum on the Commission's behalf. Gary Messer, Air Quality Manager with the Department's Western Region, Chuck Craig, Administrator of the Natural Resources Division with the Department of Agriculture and Jim Britton with the Department of Agriculture were available to answer questions from the Commission.

Commissioner Van Vliet asked about the enforcement and budgetary roles of the Department following the transfer. Mr. Messer reviewed the specific controls still available to the Department, and assured the Commission that the Department will continue to monitor air quality data. Commissioner McMahan moved to approve the Department's recommendation and to authorize the Director to execute the Memorandum of Understanding on the Commission's behalf. Commissioner Eden seconded the motion and it was unanimously approved.

G. Rule Adoption: Amendments to Waste Tire Carrier Permit Rules

Paul Slyman, Acting Waste Management and Cleanup Division Administrator and Benjamin Allen with the Department's Spill Management program introduced this item to the Commission. The proposed amendments would establish a new class of waste tire carrier permit (Common Carrier Class Waste Tire Carrier Permit) and place a limit on the total amount of permit fees to be charged to permit holders. The rule amendment would allow a large trucking company with more than fifteen trucks to pay a single fee, equivalent to the cost of fifteen decals, in lieu of the current rule which calls for a \$25.00 charge per vehicle. The proposed rule would also waive a requirement that each truck covered under a Common Carrier Class Waste Tire Carrier Permit display a decal.

Mr. Slyman reported that the Department received no public comments on the proposed amendments. Commissioner Van Vliet moved to approve the Department's recommendation. Commissioner McMahan seconded the motion and it was unanimously approved.

H. Rule Adoption: Rules Regarding Clarification of Tank Vessel Per Trip Fees and Oil Spill Contingency Plan Exceedance Analysis

Paul Slyman, Solid Waste Policy and Program Development Manager with the Department's Waste Management and Cleanup Division and Benjamin Allen with the Spill Management Program introduced this item to the Commission. Mr. Allen noted that the rule package contained two items:

Tank Vessel Per Trip Fees

Tank vessels are ships carrying bulk oil. Current rules require selfpropelled tank vessels to pay a \$650 fee per trip in Oregon waters. Non-selfpropelled tank vessels under current rules pay a \$28 per trip fee. Two companies have considered operating small self-propelled tank vessels, to be used much as non-self-propelled vessels are now used. The current \$650 per trip fee makes it financially infeasible to operate such small self-propelled vessels. The revision proposed by the Department would apply the \$28 per trip fee.

Commissioner Van Vliet asked whether the Department had statutory authority to create such a new fee or fee classification. Mr. Allen responded that the Department regarded the proposed rule revision as clarifying the application of current fees rather than as a new fee.

Oil Spill Contingency Planning

Mr. Allen said that Department rules require vessels and facilities dealing with bulk oil to have spill contingency plans which describe how a spill will be responded to, including what equipment is available for the response. The proposed revision would allow Oregon to sign a Mutual Aid agreement among the West Coast states and British Columbia. The revision would allow response contractors to move equipment and personnel identified in the spill contingency plans to other states to respond to spills, and vice versa. Mr. Allen said that Oregon would likely benefit from the agreement, since other states have more equipment available than does Oregon. Commissoner Van Vliet moved approval of the rules and revisions as proposed by the Department. Commissioner Eden seconded the motion and it was unanimously approved.

F. Temporary Rule Adoption: 401 Grazing Certification Rules

Deputy Director Lydia Taylor introduced this item to the Commission. Chuck Craig and Ray Jaindl with the Department of Agriculture (ODA) were also available to answer questions from the Commission. The temporary rules would provide a streamlined process for the Department to issue 401 Certification to applicants for U.S. Forest Service grazing leases during the current cycle. Ms. Taylor said a permanent rulemaking process will be developed by the ODA and the Department. Temporary rules are necessary due to the immediate need to provide certification of the 1997 grazing lease permittees. The ODA is concurrently adopting temporary rules which will provide the conditions to be placed in 401 certificates issued for the 1997 grazing season.

Ms. Taylor summarized the written comments received by the Department and said that technical comments would be addressed during the permanent rulemaking process. Ms. Taylor discussed written testimony from Gail Achterman which recommended adding a reference for removal of local land use approval to the Statement of Need and Justification. She also answered Commissioners' questions regarding the status of the appeal of Judge Haggerty's ruling and budget and staff required for implementing the the proposed rule.

Larry Knudsen, Assistant Attorney General with the Department of Justice, recommended amending the Statement of Need and Justification to read:

"Documents relied upon: U.S. District Court Civil No. 94-552-HA Opinion and Order <u>Oregon Natural Desert Association v. Thomas</u> (appeal pending) and <u>California Coastal Commission v. Granite Rock Company</u>, 480 U.S. 572, 107 S.Ct. 1419 (1987) (state land use regulation of federal lands is preempted)."

Commissioner Van Vliet moved to approve the amendment to attachment A - Statement of Need and Justification as suggested by Mr. Knudsen. Commissioner Eden seconded the motion and it was unanimously approved.

Commissioner McMahan then moved to adopt the temporary rules recommended by the Department as amended. Commissioner Eden seconded the motion and it was unanimously passed. Environmental Quality Commission Meeting Minutes February 28, 1997 Page 7

I. Action Item: Total Dissolved Gas Waiver

The Commission considered a request from the U.S. Fish and Wildlife Service and the National Marine Fisheries Service for a waiver to the State's water quality standard for total dissolved gas to enable water to be spilled over hydroelectric dams on the Columbia River to assist outmigrating juvenile salmonid smolts.

Russell Harding, Watershed and Basins Manager with the Department's Water Quality Division, introduced Bruce Lovelin, Executive Director of the Columbia River Alliance, to the Commission. Mr. Lovelin asked the Commission to deny both the spill at Bonneville Dam for Spring Creek Hatchery tule fall Chinook, and the system-wide spill to begin in mid-April.

Russell Harding and Dr. Margaret Filardo from the Fish Passage Center, representing the Oregon Department of Fish and Wildlife, presented the highlights from the Department's staff report. The report recommended approving the waiver as requested subject to a number of conditions. Harding's and Filardo's presentation focused on the river conditions in 1996 and on what had been learned as a result. The 1996 year was characterized by big water, big flows, and high dissolved gas levels. When dissolved gas levels rose, the biological monitoring detected elevated gas bubbles in fish tissue. Correspondingly, when gas levels were within the waiver limits, very low levels of gas bubbles were detected. Harding concluded with a summary of those elements still requiring research.

Donna Darm with the National Marine Fisheries Service addressed the Commission and said there is still insufficient monitoring data to establish clear a risk to benefit determination. She recommended continuing the pit tag studies and building a comprehensive data base.

Chair Lorenzen suggested the request be divided into two parts so that the Commission could consider the spill over Bonneville Dam for Spring Creek hatchery fish separately from the Columbia system-wide spill for threatened and endangered Snake River salmon. This was moved by Commissioner Van Vliet, seconded by Commissioner Eden and approved unanimously.

Commission discussion focused on the increased survival of smolts as a result of a dissolved gas level of 120% versus 110%. Chair Lorenzen asked Marv Yoshinaka from the U.S. Fish and Wildlife Service if the survival was actually 44,000 fish and Mr. Yoshinaka responded affirmatively. Chair Lorenzen, drawing on Mr. Lovelin's previous comments, established the cost of the Bonneville spill at approximately two million dollars.

Commissioner Van Vliet moved to approve the waiver for spill for the Bonneville Dam - Spring Creek hatchery in accordance with the Department's recommendation. Chair Lorenzen requested a roll call vote. Commissioners Eden, McMahan and Van Vliet voted "yes." Chair Lorenzen voted "no" and the motion passed.

Note: The Commission adjourned temporarily for lunch at 12:15 p.m. and reconvened at 1:10 p.m.

Donna Darm with NMFS addressed the Commission about the waiver request for the system-wide spill. She noted that the Expert Gas Panel established previously would not convene this year. She said that after conferring with her science advisors, she was convinced that little new data would be forthcoming this year and that the Expert Panel should meet only every two years. Chair Lorenzen expressed his disappointment and reiterated his concern about the lack of a public process to review the issues and find answers to critical questions..

The Commission was concerned about the lack of specificity in the questions the Department had asked NMFS to address in its year end report. Commissioner Van Vliet moved to approve the spill waiver request for the period from April 10, 1997 to midnight on April 18, 1997 only. The motion included direction to the Department to return to the Commission at the April, 1997 meeting with more precise details and conditions for NMFS' annual report. Commissioner Eden seconded the motion and it was approved with four "yes" votes.

E. Rule Adoption: Permanent Rule Making for the On-Site Sewage Disposal Systems in the Clear Lake Watershed in Lane County (continued)

Following instructions from the Commission to return with draft language to address possible alternatives available to the Commission should water quality degradation occur, Ms. Burton proposed adding the following language to the rule making proposal (under 340-41-270 (5):

"If water quality monitoring within the Clear Lake watershed indicates unacceptable degradation, the Commission may require additional studies, and/or corrective actions, or both, by rule. Such corrective actions may include but are not limited to the construction of sewage collection and off-site treatment and disposal facilities."

Commissioner Eden suggested removing the words "unaceptable" and "and/or" from the language.

Commissioner Van Vliet moved to approve the rule with the added paragraph as proposed by the Department and as amended by Commissioner Eden. Commissioner Eden seconded the motion and it was approved with four "yes" votes.

J. Action Item: Implementation of Environmental Equity Advisory Committee Recommendations

Deputy Director Lydia Taylor introduced this item to the Commission. The Department prepared a report at the Governor's request to document its implementation plans for Executive Order EO-94-25, which directs certain state agencies to implement recommendations developed by the Environmental Equity Advisory Committee. This Committee oversaw the identification of existing and perceived inequities in the State's administration of its environmental laws.

The Department's plans for implementation of the Executive Order include:

- Ensuring development and targeting of all agency outreach and education efforts to reach low income and minority interests.
- Ensuring representation of minority and low income interests on advisory committees.
- Ensuring that permit writers identify and address low income and minority issues in the permitting process.
- Scheduling agency meetings in facilities that meet ADA requirements.
- Ensuring that water quality policy is consistent statewide.
- Coordinating water quality data with other agencies.
- Ensuring that risk assessment includes adequate data on levels of fish consumption by various ethnic groups and that communication and outreach efforts are directed to these groups as well.
- Identifying ways to lessen potential water pollution from residential wells in rural areas, especially for low income and minority communities.
- Ensuring that educational and outreach efforts regarding household hazardous waste and pollutants are directed to minorities and low income interests.

Ms. Taylor said the report represents the beginning of what will be an ongoing effort to prevent environmental equity issues in the future. The report includes "guiding principles" to be distributed to staff to encourage a working environment that is aware of and encourages diverse cultures and viewpoints. There was no formal action required by the Commission on this item.

K. Informational Item: Portland Area Ozone Contingency Plan Exceedance Analysis

Greg Green, Air Quality Division Administrator, and Brian Finneran with the Air Quality Division presented this item to the Commission. The Commission adopted the Portland/Vancouver Ozone Maintenance Plan in July, 1996. One of the required elements of the Plan is a contingency plan to address future exceedances of the federal ozone air quality standard.

Mr. Green summarized the ozone exceedances which occurred in the Portland area during the summer of 1996. Two of these exceedances occurred at one site (four exceedances in three years at the same monitoring site is a violation). This triggered the contingency measure in the maintenance plan requiring the Department and the Washington Southwest Air Pollution Control Authority to analyze the meteorological conditions associated with the exceedances to see if the maintenance control plans are sufficiently protective.

The analysis indicated that the conditions were within the acceptable range as projected under the maintenance plan and that once the control measures in the Plan were implemented (beginning in 1999) no further exceedances of the standard were expected.

The Department found that no new control measures were needed for the Portland/Vancouver ozone maintenance plan. However, current efforts to minimize emissions on Clean Air Action days could be improved by expanding the voluntary curtailment program for gasoline barge loading and putting greater emphasis on public education outreach efforts for the years 1997 and 1998. No formal action was required by the Commission.

M. Commissioners' Report

There were no Commissioners' Reports presented.

N. Director's Report

Director Marsh updated the Commission on the status of legislative and budget issues. He reported that legislative leadership is giving verbal support to the Oregon Plan for Coastal Salmon Restoration.

Privatization of the Vehicle Inspection Program continues to attract legislative interest, he reported. Director Marsh documented the Department's involvement in the privatization discussions and referred the Commission to the Radian Report, released in 1995, that analyzed the costs of the state-run program in relation to a privately-run testing program.

The Department will conduct an EdNet broadcast panel discussion/Q&A session on the temperature standard on March 13, 1997. Director Marsh said the presentation will be broadcast at twelve sites around the state.

Director Marsh said that after extensive review, the Department will release a set of proposed changes to Hyundai America's 401 Certification to public hearing on March 19, 1997 in Eugene. He indicated the changes will clarify the Department's intent to protect water quality at the highest possible level during construction and operation of the computer chip manufacturing plant.

There was no further business and Chair Lorenzen adjourned the meeting at 2:15 p.m.

Approved <u>Approved</u>

Minutes are not final until approved by the EQC

Environmental Quality Commission Minutes of the Two Hundred and Fifty-Ninth Meeting

April 18, 1997

Regular Meeting

The Environmental Quality Commission meeting was convened at 8:45 a.m. on Friday, April 18, 1997, at the Department of Environmental Quality, 811 S.W. Sixth Avenue, Portland, Oregon. The following members were present:

> Carol Whipple, Vice Chair Linda McMahan, Member Tony Van Vliet, Member Melinda Eden, Member (Commissioner Eden joined the meeting at 8:55 a.m.) (Chair Lorenzen did not attend the meeting)

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.

Vice Chair Whipple called the meeting to order at 8:45 a.m.

Work Session #1: Mixing Zone Rulemaking

Barbara Burton, Western Region Water Quality Manager, presented this item to the Commission. The proposed rule revisions were initiated by the Department in response to a lawsuit filed relating to the NPDES permit issued to Oremet. The Department worked with a technical advisory committee which held nine meetings over a year's time. The technical advisory group reached substantial agreement over most of the provisions of the proposed rule, and

agreed that the remaining areas of concern should be forwarded to the Triennial Standards Policy Advisory Committee for further discussion and action.

Ms. Burton said the mixing zones and the various alternatives, as well as their potential impact on water quality, fiscal impact on permittees, impact on Department staff resources and legal implications are complex.

Ms. Burton then introduced invited panel members including Craig Johnston, Chair of the Triennial Standards Policy Advisory Committee, Bob Gilbert with the Technical Advisory Committee, Gerry Braziel, Public Works Director of the City of Madras, and Nina Bell with Northwest Environmental Advocates. Panel members discussed their involvement with the rulemaking process and specific concerns with the final draft.

Work Session #2: Proposed Solid Waste Rules Relating to Composting Operations

Paul Slyman, Solid Waste Manager with the Department's Waste Management and Cleanup Division and Lauren Ettlin with the Waste Management and Cleanup Division presented this item to the Commission. The proposed composting facility rules were developed to minimize odor and water quality problems at composting facilities. Ms. Ettlin said the rules would provide reasonable, consistent regulation to protect air and water quality and human health while promoting large-scale composting.

Ms. Ettlin said the rules would establish three classes of regulation for composting facilities depending on the amount and type of materials composted. Fees for each class of regulation would be based on the potential environmental risk and the amount of Department staff oversight required.

Specific issues raised at public hearings held in November, 1996 were presented to the Commission for discussion. These included:

- on-farm composting
- implementation of existing water quality rules
- "grandfathering in" of existing composting facilities

An invited panel including Chuck Craig, Oregon Department of Agriculture, Dave Johnson, representing Oregon Broiler Growers and Glen Zimmerman with the Composting Council of Oregon presented further information to the Commission. Although the proposed rules did not include a "grandfathering in" of the current composting facilities, following a discussion on the issue Commissioner Van Vliet advised the Department to look closely at the "grandfathering in" condition during the final rule preparation process.

A. Approval of Minutes

There were no minutes presented.

B. Approval of Tax Credits

Maggie Vandehey with the Department's Management Services Division presented this item to the Commission. The Department recommended the Commission approve certification for the following tax credit applications:

Applications for Pollution Control Tax Credit

Division 16

	L	Total Pollution Control	\$66,255	
4737	Ronald Schmidt	AQ: Field Burning. John Deere flail chopper.	\$7,945	100%
4707	Description in	drainage tile system.	A7.045	4000/
4736	Dennis and Karen Wirth	AQ: Field Burning. Installation of an 85 acre	\$58,310	100%

Commissioner Eden moved to approve the Department's recommendation. Commissioner McMahan seconded the motion and it was approved with three "yes" votes and one "no" vote (Commissioner Van Vliet).

C. Action Item: National Marine Fisheries Service Total Dissolved Gas Waiver Request

Gene Foster with the Department's Water Quality Division introduced this item to the Commission. The waiver request to the Commission dated January 23, 1997 asked the Commission to adjust the Total Dissolved Gas Standard (TDG) as necessary to spill over dams on the Columbia River to assist outmigrating Snake and Columbia River salmon smolts, from midnight on April 10, 1997 to midnight on August 31, 1997. The Commission approved the waiver through midnight on April 18, 1997. The Commission directed the Department at its February 28, 1997 meeting to provide an outline for the National Marine Fisheries Service's (NMFS) 1998 annual report on TDG prior to considering extension of the NMFS request for a waiver to the state of Oregon's TDG water quality standard.

The Department recommended that the Commission grant the TDG waiver request as stated in the February 28, 1997 Staff Report for the Total Dissolved Gas Waiver request. The Department also recommended that the

outline for the annual report be included as part of the conditions as noted in the February 28, 1997 Staff Report under Department Recommendations section (vi) item 3.

The Department's proposed outline for the NMFS TDG Annual Report to the Commission included the following objectives:

- 1. Determine if there is a difference in the incidence and severity of signs of gas bubble disease (GBD) between migratory fish in the reservoir and in the fish sampled through the Smolt Monitoring program.
- 2. Determine the progression of GBD signs as the result of exposure to TDG and the relation between signs, health, and survival of aquatic species indigenous to the Columbia and Snake Rivers.
- 3. Describe the migratory distribution of juvenile and adult salmonids, particularly with respect to vertical distribution in the reservoir and relate fish distribution to the distribution of TDG.
- 4. Determine the physical characteristics of dissolved gas throughout the hydrosystem under specific spill and flow regimes.
- 5. Evaluation of monitoring protocols.

Additionally, Department staff recommended the report be made available for peer review by the state and federal fisheries agencies, state and federal environmental regulatory agencies, and the interested public. The draft report would be made available for public comment by December 1, 1997. The Independent Scientific Advisory Board will review the report and provide comments. NMFS will provide the final report and written reviews of the draft to the Department by January 15, 1997.

Douglas DeHart of the Oregon Department of Fish and Wildlife, Mark Schneider with the National Marine Fisheries Service and Margaret Filardo of the Fish Passage Center answered questions from the Commission.

Commissioner McMahan moved to amend the current waiver order dated February 28, 1997 to extend the period of spill through midnight, August 31, 1997and to incorporate the conditions in the Departments staff report dated April 18, 1997 and adopt the findings made previously. Commissioner Van Vliet seconded the motion. Following a roll call vote, the motion was approved with four "yes" votes.

Public Forum

Larry Tuttle spoke to the Commission about his concerns regarding the Department's general permits process. He said he cannot find permit revocation/expiration provisions in the Department's rules. Mr. Tuttle encouraged the Commission to direct the Department to provide a written explanation of the general permit process and what may happen in the event of an expired general permit. Steve Greenwood, Western Region Administrator, said the Department would prepare a response to the Commission for the meeting on June 6, 1997.

Note: The following agenda item was taken out of order.

H. Action Item: Revocation and Request to Decommission Permit No. 95-014 - John M. Compton

Larry Knudsen, Assistant Attorney General with the Department of Justice, introduced this item to the Commission. Also present were Mr. and Mrs. John Compton and Larry Edelman, Assistant Attorney General with the Department of Justice.

This case came before the Commission on John Compton's appeal of the Department's Notice of Revocation and Request to Decommission, dated June 10, 1996. Mr. Compton contended that the Department did not have the authority to revoke the permit issued to him for a capping-fill sand filter septic system once construction was completed and a Certificate of Satisfactory Completion issued.

The matter was referred to a hearings officer who issued Proposed Findings of Fact and Conclusions of Law. The hearings office held that:

- The system would not meet the permit requirements for a construction and installation permit and the permit was issued in error.
- The continued use of the system would cause a public health hazard and water pollution.
- Once construction of the system is complete, the Department does not have the authority to revoke the on-site construction permit and must seek decommissioning of the system through enforcement proceedings.

The Department took exception to the hearing officer's finding that an onsite construction permit cannot be revoked once construction is complete and

decommissioning of the system can only be ordered in an enforcement proceeding. Mr. Compton contended that the Department had no legal authority to order the decommissioning of the system since there was no factual basis for the finding of the public health or water pollution hazard.

After considering the record in the case and arguments from each party, Commissioner Eden moved to affirm the decision of the hearings officer and incorporate by reference and adopt as its own the hearings officer's Proposed Findings of Fact and Conclusions of Law, dated December 31, 1997. The motion also included direction to the Department to proceed with rulemaking, as appropriate, to clarify whether an on-site construction permit continues as an operating permit after construction is completed. Commissioner McMahan seconded the motion and it was approved with four "yes" votes.

The meeting was then recessed for lunch at 12:50 p.m. and reconvened at 1:35 p.m.

D. Rule Adoption: Municipal Solid Waste Landfill Rules of Oregon

Andy Ginsburg, Acting Manager of Air Quality Division Program Operations, introduced this item to the Commission. He said that the Environmental Protection Agency (EPA) periodically adopts New Source Performance Standards for new sources in certain source categories and Emission Guidelines for existing sources. The Department proposed to adopt federal standards for landfills by reference so that EPA can delegate enforcement of these rules to the Department.

Kathleen Craig with the Air Quality Division said the rule's purpose is to control landfill gas from large landfills that must install collections systems and control devices. She said the rule was significant for two reasons: 1) it is the first air regulation for sources traditionally regulated under the solid waste program. It was a joint effort between Air Quality and Solid Waste Divisions. Several meetings were held internally and with affected sources and 2) large landfills are subject to Title V permits.

Ms. Craig said there were no public comments on the rule. Environmental benefits expected are reductions in methane emissions by 30% and non-methane organic compounds by 53%. These reductions will minimize contribution to ozone, methane, odor and toxic effects.

Commissioner McMahan asked about the level of methane emissions from landfills. Staff responded that landfills have not been required to report methane emissions prior to this proposed regulation, but assumed the emission

levels were high. Commissioner Van Vliet asked if EPA uses any innovative remediation techniques to control landfill gases. Staff said the control technologies specified in the regulation were traditional, but landfills could propose alternative forms of control if equivalency could be shown.

Commission Van Vliet moved to adopt the Department's recommendations. Commissioner Eden seconded the motion and it was passed with four "yes" votes.

E. Rule Adoption: Annual Oregon Title V Operating Fee Increase and Redefinition of "Volatile Organic Compound" to Reflect Federal Changes

Andy Ginsburg, acting Manager of the Air Quality Division's Program Operations and Kathleen Craig with the Air Quality Division presented this item to the Commission. This proposed rulemaking included two separate actions:

Title V Increase

Mr. Ginsburg said that the Department periodically adopts a Title V fee increase, as allowed in statute, to cover inflationary costs related to the Title V program. The Title V program is mandated by the Clean Air Act to be fully fee-funded. Ms. Craig noted that no hearing was requested and that the Department received just one comment asking for justification of the proposed increase. The Department responded that the proposed increase covers inflationary costs and agreed to work with industry representatives in evaluating the effectiveness of the Title V program.

Delisting VOC Compounds

Mr. Ginsburg explained that Volatile Organic Compounds (VOCs) are part of a large "family" of compounds. EPA can exclude specific compounds from the definition of VOC compounds based on their negligible effect on ozone formation. The proposed action would adopt the new federal exclusion of certain VOC compounds.

Ms. Craig said the action would remove four compounds: perchlorethelene (common drycleaner solvent), acetone and two CFCs. She noted that all of these compounds would still be regulated under other programs. No hearing was requested and there were no public comments.

Commissioner McMahan moved approval of the Department's recommendation. Commissioner Van Vliet seconded the motion and it was approved with four "yes" votes.

F. Temporary Rule Adoption: Correction to the Source Specific Reasonably Available Control Technology (RACT) Applicability Rule (OAR 340-022-0104)

Andy Ginsburg, acting Manager of Air Quality Division Program Operations, presented this item to the Commission. He said that the proposed change is needed so that EPA can approve the redesignation request for the Portland Ozone Nonattainment area. The EPA brought the change to the Department's attention as part of its review of the Department's redesignation request. Mr. Ginsburg said permanent rulemaking was in process, and it would be brought back to the Commission in August, 1997 for adoption.

He said that RACT is a control technology requirement for existing major sources in nonattainment areas. There is a loophole in Department rules that could allow sources to avoid case-by-case RACT in conflict with EPA guidance. The loophole was introduced by amendments made in 1995 that were intended to improve consistency between the RACT applicability threshold and the permitting threshold. Mr. Ginsburg said the Department is working with the sources affected by the rule and that all sources are cooperating in RACT determinations.

Commissioner Van Vliet moved to approve the Department's recommendation. Commissioner McMahan seconded the motion and it was approved with four "yes" votes.

G. Action Item: Petition to Adopt a Rule Prohibiting New or Increased Waste Discharges to Coastal Water Bodies

This matter came before the Commission as a Petition to Adopt Rules Prohibiting New or Increased Waste Discharges to Certain Coastal Waterbodies pursuant to ORS 183.390 and OAR 137-01-070. The petition was filed on March 21, 1997 by Northwest Environmental Defense Center, the Pacific Coast Federation of Fishermen's Associations and the Institute for Fisheries Resources.

The petition requested that the Commission institute rulemaking procedures for rules that would substantially prohibit new or increased pollution discharges in the North Coast, Mid Coast, South Coast, Umpqua, and Rogue River Basins. The petition asked the Commission to adopt rules "to protect the

water quality of coastal streams which provide critical habitat for currently depressed and threatened populations of wild Pacific coho salmon and endangered Umpqua River sea-run chuthroat trout."

Karl Anuta with the Northwest Environmental Defense Center and Glen Spain with the Pacific Coast Federation of Eishermen's Associations presented the petition to the Commission. Mr. Spain said that failure to prevent further pollution was inconsistent with the Coastal Salmon Recovery Initiative (CSRI). Mr. Anuta asked that no further pollution permits be issued until the salmon restoration process begins and said the petition represents a first step in the process.

Vice Chair Whipple asked whether the petitioners had support from the local watershed groups and encouraged them to obtain broader advocacy and support from those groups.

Mike Downs with the Water Quality Division discussed the Department's concerns with the petition. He said the CSRI is a comprehensive plan and that anti-degradation rules already exist. He documented the actions the Department has already taken and will continue to implement to contribute to success of the Plan.

Commissioner Van Vliet moved to deny the petition without prejudice to the Petitioners to resubmit their petition at a later date. The motion also included direction to the Department to prepare a written Order to be signed by the Director. Commissioner McMahan seconded the motion and it was passed with four "yes" votes.

I. Commissioners' Reports

There were no Commissioners' Reports presented.

J. Director's Report

Deputy Director Lydia Taylor presented the Director's written report to the Commission (Director Marsh left the meeting to attend a legislative committee meeting). There were no questions from the Commission.

There was no further business and Vice Chair Whipple adjourned the meeting at 2:55 p.m.

Environmental Quality Commission

 $\hfill\square$ Rule Adoption Item

X Action Item

 $\hfill\square$ Information Item

Agenda Item <u>B</u> June 6, 1997 Meeting

Approval of Tax Credit Applications Summary: Staff recommends approval of the following tax credits: 2 Pollution Prevention \$ 94,503 4 Reclaimed Plastics \$ 122,644 23 Pollution Control \$ 122,644 23 Pollution Control \$ 15,582 6 Air Quality \$ 902,707 1 Water \$ 15,582 13 Solid Waste \$ 400,711 3 Storage Tanks \$ 333,796 29 Tax Credits for Approval \$ 1,869,943 1 Application exceeding \$250,000 (Accountant Review Included) 0 Discussion issue 0 Applications for pre-certification 1 Request for certificate transfer 0 Certificates for revocation 0 Request for extension of time to file Approve issuance of tax credit certificates for the applications presented in Attachment the staff report. Magnet G. Vandekey Xuter Magnet G. Vandekey Xuter Division Administrator Director	Title:				
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[†]Accommodations for disabilities are available upon request by contacting the Public Affairs Office at (503)229-5317(voice)/(503)229-6993(TDD).

Date:	May 19, 1997
То:	Environmental Quality Commission
From:	Langdon Marsh, Director
Subject:	Agenda Item B, June 5, 1997 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:

Applications for Pollution Prevention Pilot Program

All equipment is used in the normal course of doing business. However, the owners would not have replaced their existing systems at this time or with this particular equipment had it not been required by the National Emission Standards for Hazardous Pollutants (NESHAP) and to avoid monitoring and record-keeping requirements.

			Certified	Certif	icate
TC No.	Applicant	plicant Description of Facility	Cost	Val	ue
4743	The Cleanery - Santa Clara	New dry-cleaning machine using Exxon DF 2000 solvent. Eliminates emissions of perc to the atmosphere by replacing a perc machine.	\$72,898	\$	36,449
4762	Campbell's Cleaners, Inc.	Multiprocess wet cleaning system which was installed as a replacement for about 55% cleaning capacity of existing perc dry cleaning machine.	\$21,605	\$	10,803
		Total Prevention	\$94,503	\$	47,252

Applications for Reclaimed Plastic Tax Credit

All facilities are a normal part of doing business. It is unknown if the applicant would have installed these particular facilities at this particular time without the incentive provided by the Reclaimed Plastic Tax Credit.

TC No.	Applicant	Description of Facility	Certified Cost	% Allocable	tificate ⁄alue
4353	D & O Garbage Service INC	2 Kohlman-Hill, Inc. model KP2600F compactor units to collect recycled plastic on the collection truck; 2 20% portions of modified collection trucks; 1 30-yard drop- box; 2 20-yard drop-boxes for storage & transport of recycled plastic.	\$54,418	100%	\$ 27,209
4626	Dinihanian Manufacturing Inc	Injection molding die used to manufacture floral card holders from reclaimed plastic.	\$39,379	100%	\$ 19,690
4710	WWDD Partnership	42', 1979 Hobbs trailer used for collecting reclaimed plastic.	\$2,975	100%	\$ 1,488
4639	Willamette Beverage Co.	REM model PERF-10 plastic bottle perforator and associate conveyor belt system.	\$25,872	100%	\$ 12,936
		Total Reclaimed Plastic	\$122,644		 \$61,323

Applications for Pollution Control Facilities Tax Credit

TC No. Polluti	Applicant ion Control: Air	Description of Facility	Certified Cost	% Allocable	 rtificate /alue
4373	Wacker Siltronic Corp	Viron wet scrubber rated at 15,000 cfm, ductwork, structural support and chemical delivery system Facility controls ammonia, hydrochlorofloric acid, potassium hydroxide and hydrogen peroxide emissions.	\$227,825	100%	\$ 113,913
4650	Universal Seed Inc	P.M. Hagel & Associates bag house system to control new vegetable seed cleaning e equipment. The baghouse is designed to operate with a particulate removal efficiency of 99%.	\$62,326	100%	\$ 31,163

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TC No.	Applicant	Applicant Description of Facility	Certified Cost	% Allocable	Certificate Value	
4676	Smurfit Newsprint Corp	Press vent wet scrubbing system installed to control emissions of particulate matter and formaldehyde.	\$366,710	100%	\$	183,355
4677	Smurfit Newsprint Corp	Principal Purpose: Cladwood Division - Philomath Baghouse	\$245,846	100%	\$	122,923
4711	DOUBLE J FARMS	Self contained air conditioner coolant recycling equipment (R-134A.)	\$4,199	83%	\$	1,743
4719	LARRY LAUNDER INC	AUTO AIR COOLANT RECYCLING EQUIPMENT	\$3,790	82%	\$	1,554
	<u> </u>	Sub-Total Air	\$902,707		\$	451,354

Pollution Control: Water

4720 BERNARD VAN DYKE	Animal waste management system which consists of an underground reinforced concrete tank with a reinforced concrete apron connecting tank to barn.	\$15,582	100%	\$ 7,791
	Sub-Total Water	\$15,582		 \$7,791

Pollution Control: Solid Waste

4679		John Deere 690E Excavator with model 42 Piranha Grapple, serial # DW69 EL546757 used to handle yard debris which is being processed into grade mulch	\$159,600	100%	\$ 79,800
4724	United Disposal Service Inc	5 30-yard drop-boxes, serial # 9230 to 9234	\$14,959	100%	\$ 7,480
4730	Corvallis Disposal Co.	10 2-yard front load containers with lids for cardboard recycling, model # M73T, serial # 127674 to 127683	\$3,111	100%	\$ 1,556

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TC No.	Applicant	Description of Facility	Certified Cost	% Allocable	 tificate alue
4738	Corvallis Disposal Co.	20 2-yd & 5 4-yd front load containers with lids, model # M73T, serial # 130879-13888 & 130938-130947; 9 4-yrd front load containers, model # M75T, serial # 130948- 130957; 5 6-yrd front load containers, model # M76T, serial # 130958-130962	\$13,851	100%	\$ 6,926
4739	Corvallis Disposal Co	2 Vulcan on-board Scale systems for cardboard recycling collection trucks, model # R100, Epson computer model # M- H804AEW, serial # 470001788.	\$17,874	100%	\$ 8,937
4740	Corvallis Disposal Co	576 101-gallon Toter carts, model # 60501, serial # YW008206 - YW008782 and 100 90- gallon semi-automated TOTER carts, model # 74096, serial # Q71582-Q07168	\$43,199	100%	\$ 21,600
4741	United Disposal Service Inc	One Marathon V-6030HD Baler, Serial # 91901	\$9,191	100%	\$ 4,596
4748	Albany-Lebanon Sanitation Inc	20 2-yd. front load containers model # M73T, serial # 127267-127276 & 127501-127510; 20 4-yrd front loader containers, model #75T	\$13,242	100%	\$ 6,621
4750	Albany-Lebanon Sanitation Inc	360 95-gallon Schaefer yard debris collection carts, model # USD-C95, serial # 11337- 11696	\$18,720	100%	\$ 9,360
4757	Lehl Disposal Co., Inc.	GMC Truck with 18 Foot Dump Bed	\$ 34,946	100%	\$ 17,473
4758	Tri County Construction Clean-up Inc.	1994 GMC collection truck equipped with 18 foot dump box., model # C7H042, serial #1GDM7HIJRJ519791, license # 513321ompartmented bed	\$34,866	100%	\$ 17,433
4760	Albany-Lebanon Sanitation, Inc.	576 101-gallon Toter wheeled carts, model # 60501, serial # YB008053 through YB oo8629	\$37,152	100%	\$ 18,576
4761	United Disposal Service Inc.	Marathon TC-2.5 Garbage Compactor System	\$23,779	100%	\$ 11,890
		Sub-Total Solid Waste	\$400,711		 \$200,358

10101

TC			Certified	%	Certificate
No.	Applicant	Description of Facility	Cost	Allocable	Value

Pollution Control: Storage Tanks

4648	Lou Dobbins Inc	Facility upgrade for two underground tank systems including Stage II vapor recovery.	\$120,576	92%	\$ 55,465
4653	Troutwood Inc	Three protected tank systems with double- wall fiberglass/steel tanks, double-wall flexible plastic piping, spill containment basins, tank gauge system, overfill alarm, turbine leak detectors, sumps, automatic shutoff equipment.	\$194,738	91%	\$ 88,606
4759	Burns Junction Station	Upgrade from underground to protected aboveground storage tank system.	\$18,482	100%	\$ 9,241
		Sub-Total Storage Tanks	\$333,796		\$ 153,312
		Pollution Control Total	\$1,652,796		\$ 812,815

All Tax Credits 6/5/97 EQC

\$1,869,943

\$ 921,390

Certificate Transfer

On March 27, 1997, Raymond Richmond of Richmond's Service requested Tax Credit 2268 issued 9/21/90 be transferred to Rodney A. Woodside (dba Richmond's Service.) The request is shown in Attachment B.

Background and Discussion of Issues

There are no issues presented for discussion.

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.

Memo To: Environmental Quality Commission Agenda Item B May 19, 1997 Page 6

Conclusions

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

Recommendation for Commission Action

The Department recommends the Commission approve certification for the tax credit applications as presented in Attachment A of the Department Staff Report and the transfer of the certificate as presented in Attachment C.

Intended Follow-up Actions

Notify applicants of Environmental Quality Commission actions.

Attachments

- A. Pollution Control Tax Credit Application Review Reports
- B. Request for Certificate Transfer
- C. Tax Credit Program Overview

Reference Documents (available upon request)

- 1. ORS 468.150 through 468.190.
- OAR 340-16-100 through 340-16-125.
- 3. OAR 340-16-005 through 340-16-050.
- 4. ORS 468.925 through 468.965.
- 5. OAR 340-17-010 through 340-17-055.

Approved:

Section:

Report Prepared By: Margaret Vandehey Phone: (503) 229-6878 Date Prepared: May 19, 1997

Division:

Taxshare\eqc\9706_deq.doc

Attachment A

Application No. TC-4353

State of Oregon Department of Environmental Quality

RECLAIMED PLASTIC TAX CREDIT TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

D & O Garbage Service, Inc. 1140 Boone Rd., SE Salem, Oregon 97306

The applicant is a solid waste collection company. The applicant owns and operates the equipment claimed in this tax credit.

Application was made for reclaimed plastic tax credit.

2. Description of Equipment, Machinery or Personal Property

The claimed equipment is: two Kohlman-Hill Inc. model KP2600F compactor units to collect recycled plastic on the collection truck; two 20% portions of modified collection trucks; one 30-yard dropbox; and two 20-yard drop boxes for storage and transport of recycled plastic.

The claimed facility investment costs:

Two collection trucks 20% Two plastic compactors	\$26,618 19,772		
Three drop boxes	8,030		
Total	\$54 418		

An independent accountant's review of documentation of the cost of claimed equipment was provided.

3. <u>Procedural Requirements</u>

The investment is governed by ORS 468.451 through 468.491, and by OAR Chapter 340, Division 17.

The investment met all statutory deadlines in that:

- a. The request for preliminary certification was received on February 9, 1995. The preliminary certification was approved on March 13, 1995.
- b. The investment was made on May 22, 1995.
- c. The request for final certification was submitted on January 15, 1997, and was filed omplete on February 19, 1997.

4. <u>Evaluation of Application</u>

- a. The investment is eligible because the equipment is necessary to collect and transport reclaimed plastic.
- b. Allocable Cost Findings

In determining the portion of the investment costs properly allocable to reclaiming and recycling plastic material, the following factors from ORS 468.486 have been considered and analyzed as indicated:

 The extent to which the claimed collection, transportation, processing or manufacturing process is used to convert reclaimed plastic into a salable or usable commodity.

The equipment is to be used 100% of the time for collection and transportation of recycled plastic.

2) Any other factors which are relevant in establishing the portion of the actual cost of the investment properly allocable to the collection, transportation or processing of reclaimed plastic or to the manufacture of a reclaimed plastic product.

No other factors were considered relevant.

The actual cost of the investment properly allocable to processing reclaimed plastic as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The investment was made in accordance with all regulatory deadlines.
- b. The investment is eligible for final tax credit certification in that the equipment is necessary to collect and transport a reclaimed plastic.
- c. The qualifying business complies with DEQ statutes and rules.
- d. The portion of the investment cost that is properly allocable to reclaiming and recycling plastic is 100%.

6. <u>Director's Recommendation</u>

Based upon these findings, it is recommended that a Reclaimed Plastic Tax Credit Certificate bearing the cost of \$54,418 with 100% allocated to reclaiming plastic material, be issued for the investment claimed in Tax Credit Application No. TC-4353.

William R. Bree TAX\TC4353PL.STA (503) 229-6046 February 19, 1996

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State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Wacker Siltronic Corporation P.O. Box 83180 Portland, OR 97283-0180

The applicant owns and operates a silicon wafer manufacturing facility in Portland, Oregon.

Application was made for tax credit for an air pollution control facility.

2. <u>Description of Facility</u>

The claimed facility controls ammonia, hydrofluoric acid, potassium hydroxide and hydrogen peroxide emissions. It consists of a Viron wet scrubber rated at 15,000 cfm, ductwork, structural support and a chemical delivery system.

Claimed Facility Cost: \$314,760

A distinct portion of the claimed facility makes an insignificant contribution to the principal purpose of pollution control. The applicant claimed \$213,900 for FRP scrubber ducting. The application did not contain copies of invoices or purchase orders that would verify the cost of the FRP ducting. A written request was made to the applicant to provide this information. The applicant could not provide copies of invoices or purchase orders for the ducting. The applicant did send a copy of their Monthly Combined Cost Report (Attachment 1) which did not contain sufficient information that could be used to verify the cost of the FRP ducting. In order to establish a cost associated with the FRP ducting, the 1993 edition of Means Mechanical Cost Data was used. Means is commonly used by engineering and construction firms for cost estimating. It lists the installed costs for a variety of fittings and duct sizes for FRP acid fume exhaust systems. The applicant provided drawings of the FRP ducting system which were used to determine the lineal footage, the type and number of fittings for the system. Using this information and the Means Mechanical Cost Data, an engineering cost estimate for the applicants FRP ducting system was performed. See Attachment 2. It calculated out to be \$148,094. This would reduce the claimed facility cost by \$65,806. In addition, the applicant claimed \$7,900 as a cost estimate for an electrical motor control center and instrumentation. This cost was already included in the contractors requirements to furnish and install the fume scrubber as stated in Section 11520, Part 2, paragraph F of the applicant's Fume Scrubber System specifications. The applicant also claimed \$7,372 for General Conditions and \$3,325 for insurance. Markup should only be allowed on \$221,189 which is the cost of the scrubber and the adjusted ducting cost.

The revised markup amount (3%) is \$6,636, which means that the claimed facility cost needs to be reduced by \$2,532.

Ineligible Costs: \$86,935

Adjusted Facility Cost: \$227,825

Accountant's Certification was provided.

The applicant indicated the useful life of the facility is 10 years.

3. <u>Procedural Requirements</u>

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:

Construction of the facility was substantially completed on July 21, 1993 and placed into operation on July 21, 1993. The application for final certification was received by the Department on March 27, 1995. The application was found to be complete on June 28, 1996.

4. <u>Evaluation of Application</u>

a. Rationale For Eligibility

The facility is eligible because the principal purpose of the facility is to comply with a requirement imposed by the applicant's Air Contaminant Discharge Permit Number 26-3002 issued by the Oregon Department of Environmental Quality. Specifically paragraphs 6 and 9 under Performance Standards and Emission Limits. Both of these paragraphs limit the NO_x emissions. The claimed facility facilitates the control of NO_x emissions. The emission reduction is accomplished by the elimination of air contaminants as defined in ORS 468A.005.

Prior to the installation of the claimed facility, the controlled emissions were mixed with NO_x emissions and entered an existing scrubber. Due to capacity limitations the scrubber needed to be replaced. The applicant decided that in order to enhance the performance and minimize the cost of the new NO_x scrubber, the acid etch emissions should be separated from the NO_x emissions and controlled in a less expensive wet scrubber. The cost of scrubbing one cubic foot of NO_x is over six times more costly than treating one cubic foot of hydrofluoric acid emissions. Also, there is interference from the acid fumes in the chemistry required to treat NO_x .

The claimed facility controls the hydrofluoric acid, ammonia, potassium hydroxide and hydrogen peroxide emissions generated from the acid etch processes. The scrubber was designed to remove 99% of these emissions. The principle of the operation of the scrubber is as follows: The contaminated air stream passes up through a vertical packed bed. Recirculated water with a pH of 9 is sprayed on the top of the packed bed. As the water flows through the packing, it adsorbs the pollutants. The claimed facility has a system to monitor and control the pH of the recirculation water. A small amount of the recirculation water is discharged to the POTW and fresh water is added as make-up. The emissions from the processes are carried to the scrubber in a fiberglass duct system.

b. Eligible Cost Findings

In determining the percent of the 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 facility 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.

The applicant indicates in the application so there is no income or savings from the facility, so there is no return on the investment.

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

The treatment technology of the claimed facility is state-of-the-art and considered best available control technology economically achievable for the type of control required.

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

There is no savings from the facility. The cost of maintaining and operating the facility is \$24,300 annually.

The increase costs are due to the cost to operate electric motors with a combined horsepower of 50 hp, the cost of treatment chemicals and maintenance labor.

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

The adjusted eligible facility cost has been determined to be \$227,825. A total of \$86,935 was not eligible because it did not directly reduce pollution or the applicant could not verify the costs reduced pollution. See Section 2 for additional details.

The actual cost of the facility properly allocable to pollution control as determined by using this factor or these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for final tax credit certification in that the principal purpose of the facility is to comply with a requirement imposed by the Oregon Department of Environmental Quality to control air pollution.
- c. The facility complies with the conditions of the applicant's Air Contaminant Discharge Permit.
- d. The portion of the facility cost that is properly allocated to pollution control is 100%.

6. <u>Director's Recommendation</u>

Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$227,825 with 100% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4373.

Dennis E. Cartier SJO Consulting Engineers, Inc.

November 11, 1996 April 11, 1997 - Additional clarification to Paragraph 2.

Application No. TC-4626

State of Oregon Department of Environmental Quality

RECLAIMED PLASTIC TAX CREDIT TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Dinihanian Manufacturing, Inc. 15005 NW Cornell Rd. Beaverton, Oregon 97006

Dinihanian Manufacturing Inc. is a plastic manufacturing company. The claimed equipment will be used to manufacture a reclaimed plastic product.

Application was made for Reclaimed Plastic Tax Credit.

2. <u>Description of Equipment, Machinery or Personal Property</u>

The claimed equipment consists of an Injection molding die used to manufacture floral card holders from reclaimed plastic.

The claimed facility investment costs: \$39,379

The claimed cost of the facility was certified by an independent accountant.

3. **Procedural Requirements**

The investment is governed by ORS 468.451 through 468.491, and by OAR Chapter 340, Division 17.

The investment met all statutory deadlines in that:

- a. The request for preliminary certification was received on June 18, 1996. The preliminary certification was issued on June 18, 1996.
- b. The investment was made on July 11, 1996.
- c. The request for final certification was submitted on April 23, 1997 and was filed complete on April 30, 1997.

4. Evaluation of Application

- a. The investment is eligible because the equipment is used to manufacture a reclaimed plastic product.
- b. Allocable Cost Findings

In determining the portion of the investment costs properly allocable to reclaiming and recycling plastic material, the following factors from ORS 468.486 have been considered and analyzed as indicated:

1) The extent to which the claimed collection, transportation, processing or manufacturing process is used to convert reclaimed plastic into a salable or usable commodity.

The equipment is to be used 100% of the time for manufacture of a reclaimed plastic product.

 Any other factors which are relevant in establishing the portion of the actual cost of the investment properly allocable to the collection, transportation or processing of reclaimed plastic or to the manufacture of a reclaimed plastic product.

No other factors were considered relevant.

The actual cost of the investment properly allocable to processing reclaimed plastic as determined by using these factors is 100%.

5. Summation

- a. The investment was made in accordance with all regulatory deadlines.
- b. The investment is eligible for final tax credit certification in that the equipment is necessary to manufacture a reclaimed plastic product.
- c. The qualifying business complies with DEQ statutes and rules.
- d. The portion of the investment cost that is properly allocable to reclaiming and recycling plastic is 100%.

6. <u>Director's Recommendation</u>

Based upon these findings, it is recommended that a Reclaimed Plastic Tax Credit Certificate bearing the cost of \$39,379 with 100% allocated to reclaimed plastic recycling, be issued for the investment claimed in Tax Credit Application No. TC-4626.

William R. Bree TAX\TC4626PL.STA (503) 229-6046 April 30, 1997

Application No. TC-4639

State of Oregon Department of Environmental Quality

RECLAIMED PLASTIC TAX CREDIT TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Willamette Beverage Company 3030 Judkins Road Eugene, Oregon 97403

The applicant is a soft drink bottling and distribution company. The claimed equipment will be used for recycling plastic soft drink bottles.

Application was made for reclaimed plastic tax credit.

2. Description of Equipment, Machinery or Personal Property

The claimed equipment consists of a REM model PERF-10 plastic bottle perforator and associated conveyor belt system.

The claimed facility investment costs: \$25,872

An independent accountant's certification of facility costs was provided.

3. <u>Procedural Requirements</u>

The investment is governed by ORS 468.451 through 468.491, and by OAR Chapter 340, Division 17.

The investment met all statutory deadlines in that:

- a. The request for preliminary certification was received on July 23, 1996. The 30-day waiting period was waived on August 7, 1996, and the request for preliminary certification was approved on October 18, 1996.
- b. The investment was made on November 26, 1996.
- c. The request for final certification was submitted on December 30, 1996, and was filed complete on February 14, 1997.

4. Evaluation of Application

- a. The investment is eligible because the equipment is necessary to process reclaimed plastic.
- b. Allocable Cost Findings

In determining the portion of the investment costs properly allocable to reclaiming and recycling plastic material, the following factors from ORS 468.486 have been considered and analyzed as indicated:

 The extent to which the claimed collection, transportation, processing or manufacturing process is used to convert reclaimed plastic into a salable or usable commodity.

The equipment is to be used 100% of the time for processing reclaimed plastic.

 Any other factors which are relevant in establishing the portion of the actual cost of the investment properly allocable to the collection, transportation or processing of reclaimed plastic or to the manufacture of a reclaimed plastic product.

No other factors were considered relevant.

The actual cost of the investment properly allocable to processing reclaimed plastic as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The investment was made in accordance with all regulatory deadlines.
- b. The investment is eligible for final tax credit certification in that the equipment is necessary to process reclaimed plastic.
- c. The qualifying business complies with DEQ statutes and rules.
- d. The portion of the investment cost that is properly allocable to reclaiming and recycling plastic is 100%.

6. <u>Director's Recommendation</u>

Based upon these findings, it is recommended that a Reclaimed Plastic Tax Credit Certificate bearing the cost of \$25,872 with 100% allocated to reclaiming plastic material, be issued for the investment claimed in Tax Credit Application No. TC-4639.

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Lou Dobbins Inc. P O Box 590 Madras, OR 97741

The applicant owns and operates a retail gas station at 398 West 3rd St., Prineville, OR 97754, Facility ID No. 8480.

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 II vapor recovery piping.

2. Description of Claimed Facility

The claimed pollution control facilities described in this application are two doublewall fiberglass/steel tanks (one is two-compartments), doublewall fiberglass piping, spill containment basins, tank gauge system, turbine leak detectors, sumps, automatic shutoff valves, monitoring wells and Stage II vapor recovery piping.

Claimed facility cost (Accountant's certification was provided) \$120,576

3. <u>Procedural Requirements</u>

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

The facility was substantially completed on November 1, 1995 and placed into operation on November 1, 1995. The application for certification was submitted to the Department on August 14, 1996, and was considered to be complete and filed on December 15, 1996, within two years of the completion date of the project.

4. <u>Evaluation of Application</u>

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."

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

- 1) For corrosion protection Doublewall fiberglass/steel tanks and doublewall fiberglass piping.
- 2) For spill and overfill prevention Spill containment basins, sumps and automatic shutoff valves.
- 3) For leak detection Tank gauge system, turbine leak detectors and monitoring wells.

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

1) For VOC reduction - Stage II vapor recovery piping.

The Department concludes that the costs claimed by the applicant (\$120,576) 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 did not indicate that alternatives were considered. 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/steel			
tanks & fiberglass piping	\$24,000	65% (1)	\$15,600
tanks & noergiass piping	<i>\$2</i> 4 ,000	0570 (1)	\$13,000
Spill & Overfill Prevention:			
Spill containment basins	1,940	100	1,940
Sumps	4,626	100	4,626
Automatic shutoff valves	920	100	920
Leak Detection:			
Automatic tank gauge	7,560	90% (2)	6,804
Turbine leak detectors	990	100	990
monitoring wells	540	100	540
e			
VOC Reduction:			
Stage II vapor recovery	2,000	100	2,000
Labor, material, misc. parts		100	78,000
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Total \$	120,576	92%	\$111,420
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- (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 \$24,000 and the bare steel system is \$8,484, the resulting portion of the eligible tank and piping cost allocable to pollution control is 65%.
- (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. <u>Summation</u>

- 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 \$120,576 with 92% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4648.

Barbara J. Anderson (503) 229-5870 April 24, 1997

Application No. TC-4650

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Universal Seed Company 3465 Independence Highway Independence, OR 97351

The applicant owns and operates a vegetable seed cleaning business in Independence, OR.

Application was made for tax credit for an air pollution control facility.

2. Description of Facility

The claimed facility is a bag house system manufactured by P.M. Hagel & Associates that was installed to control particulate emissions from new vegetable seed cleaning equipment. The bag house was designed to operate with a particulate removal efficiency of 99%.

Claimed Facility Cost: \$62,326

Accountant's Certification was provided.

The applicant indicated the useful life of the facility is 10 years.

3. <u>Procedural Requirements</u>

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 October 1, 1994, and placed into operation on October 1, 1994. The application for final certification was received by the Department on August 19, 1994. The application was found to be complete as submitted on August 28, 1994, within two years of substantial completion of the facility.

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4. <u>Evaluation of Application</u>

a. Rationale For Eligibility

The claimed facility is eligible because the principal purpose is to comply with OAR 340-21-040 imposed by the Department of Environmental Quality to control particulate emissions from the seed cleaning process equipment. The Air Contaminant Discharge Permit for this source, Permit #27-8033, Permit Condition 1. requires the permittee to control particulate emissions from the seed cleaning operations. The emission reduction is accomplished by the elimination of air contaminants as defined in ORS 468A.005.

The air pollution control facility installed on the new seed cleaning equipment consists of a P.M. Hagel & Associates model #PMH AS-169-10-T bag house with 1990 ft² of filter cloth. The system also consists of a 40 hp, size 50 fan that operates at 20,000 cfm, a discharge rotary valve, concrete foundation and collection hopper. The system collects approximately 132 tons of dust and particulate material during the three months per year the seed cleaning equipment is operated.

b. Eligible Cost Findings

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

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

The dust and particulate matter collected by the bag house is a usable commodity. Approximately 132 tons per year are collected. A recycling company takes the material and converts it into compost.

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

The applicant states there is no income or savings from the facility, so there is no return on the investment.

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

The applicant has identified no alternative methods.

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

There is no savings from the facility. The applicant pays approximately \$4,000 a year to dispose of the dust and particulate at the recycling facility.

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

There are no other factors to consider in establishing the actual cost of the facility properly allocable to prevention, control or reduction of pollution. The principal purpose of the facility is to control a substantial quantity of air pollution.

The actual cost of the facility properly allocable to pollution control as determined by using this factor or these factors is 100%.

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 principal purpose of the facility is to comply with a requirement imposed by the applicant's Air Contaminant Discharge Permit issued by the Department of Environmental Quality to control air pollution.
- c. The facility complies with Department statues and permit conditions.
- d. The portion of the facility cost that is properly allocated 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 \$62,326 with 100% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4650.

Dennis E. Cartier SJO Consulting Engineers, Inc.

March 28, 1997

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Troutwood Inc. 10134 SE Stark Street Portland, OR 97216

The applicant owns and operates a retail gas station at 10134 SE Stark St., Portland, OR 97216, Facility ID No. 8226.

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 & II vapor recovery equipment.

2. <u>Description of Claimed Facility</u>

The claimed pollution control facilities described in this application are three doublewall fiberglass/steel tanks, doublewall flexible plastic piping, spill containment basins, tank gauge system, overfill alarm, turbine leak detectors, sumps, automatic shutoff valves, monitoring wells and Stage I & II vapor recovery equipment.

Claimed facility cost (Accountant's certification was provided) \$194,738

3. <u>Procedural Requirements</u>

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 8, 1994 and placed into operation on September 8, 1994. The application for certification was submitted to the Department on September 5, 1996, and was considered to be complete and filed on September 6, 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."

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

- 1) For corrosion protection Doublewall fiberglass/steel tanks and doublewall flexible plastic piping.
- 2) For spill and overfill prevention Spill containment basins, sumps, automatic shutoff valves and an overfill alarm.
- 3) For leak detection Tank gauge system, turbine leak detectors and monitoring wells.

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

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

The Department concludes that the costs claimed by the applicant (\$194,738) 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 did not indicate that alternatives were considered. 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/steel			
tanks and plastic piping	\$50,862	66% (1)	\$33,569
Spill & Overfill Prevention:			
Spill containment basins	1,463	100	1,463
Sumps	4,052	100	4,052
Automatic shutoff valves	987	100	987
Overfill alarm	316	100	316
Leak Detection:			
Automatic tank gauge	9,003	90% (2)	8,103
Turbine leak detectors	950	100	950
monitoring wells	1,054	100	1,054
VOC Reduction:			
Stage I & II vapor recovery	2,620	100	2,620
Labor, material, misc. parts		100	123,431
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Total \$	194,738	91%	\$176,545

- (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 \$50,862 and the bare steel system is \$17,465, the resulting portion of the eligible tank and piping cost allocable to pollution control is 66%.
- (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. <u>Summation</u>

- 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 91%.

6. <u>Director's Recommendation</u>

Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$194,738 with 91% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4653.

Barbara J. Anderson (503) 229-5870 April 24, 1997

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Smurfit Newsprint Corporation Cladwood Division 351 North 15 Street PO Box 1149 Philomath, Oregon 97370

The applicant owns and operates a manufacturing plant that utilizes waste newsprint and wood shavings for manufacture of solid panels. The plant is located 5 miles west of Corvallis on Highway 20/34 on North 15 Street in Philomath, Benton County, Oregon.

Application was made for tax credit for an air pollution control facility.

2. Description of Facility

The claimed facility is a press vent wet scrubbing system which was installed to control emissions of particulate matter and formaldehyde from the exhaust of the press that utilizes heat and pressure to press mats into solid panels at the Philomath plant. The plant utilizes waste newsprint and wood shavings for manufacture of solid panels that can be cut into exterior rated siding, garage door inserts, and other decorative components.

Claimed Facility Cost:

\$403,857

Accountant's Certification was provided.

Review performed by Symond's, Evan's & Larson, P.C. identified the following nonallowable costs:

Miscellaneous costs which were not related to the facility	\$ 7,674
Costs related to equipment not used	7,178
Costs related to repair of faulty equipment	<u>22,295</u>
Total non-allowable costs	\$37,147
Eligible Facility Cost \$366,710	·

The applicant indicated the useful life of the facility is 23 years.

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 November 1, 1994 and placed into operation the same day. The application for final certification was received by the Department with all necessary information to process on October 15, 1996, within two years of substantial completion of the facility.

Application No. TC-4676 Page #2

4. Evaluation of Application

a. Rationale For Eligibility

The claimed facility is a press vent wet scrubbing system consisting of (1) a spray system designed by PF&C, which extinguishes burning embers and cools the exhaust gases, (2) a Western Pneumatics, Inc. 3-phase wet scrubber, which removes the particulate matter and formaldehyde from the exhaust gases, (3) a Bauer Model #552-48 hydrasieve, which removes the larger solid particles from the blow down of the wet scrubber (4) a Cornell Model #3WB-20-2 pump, which is used for recirculation of water to the PF&C spray system, and (5) a Koch Engineering mist eliminator (10'x10' Fleximesh) pad, which removes minute droplets of water from the exhaust gases from the wet scrubber. The press vent wet scrubbing system was installed to control emissions of particulate matter and formaldehyde from the press vent exhaust at the Philomath plant.

The applicant has estimated that the installation of the press vent scrubbing system has resulted in a reduction of about 85% of particulate matter emissions and about 70% of formaldehyde emissions from the press vent.

Prior to the installation of the press vent wet scrubbing system, the exhaust from the press was vented to the atmosphere without the use of any air pollution control equipment.

The primary purpose of the press vent wet scrubbing system is therefore to control emissions of particulate matter and formaldehyde from the exhaust of the press vent.

Installation of the press vent wet scrubbing system also meets the requirement that the principal purpose of the claimed facility is to comply with a requirement imposed by the Department to prevent, control, or reduce air pollution.

b. Eligible Cost Findings

In determining the percentage of the certified 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 facility 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.

The applicant did not provide any information about the annual operating expenses for the claimed facility. The applicant indicated that the useful life of the claimed facility is 23 years but did not provide the return on investment (ROI) calculations.

However, based on knowledge about operations of wet scrubbers for controlling emissions of particulate matter and other contaminants, it can be reasonably assumed that the Return on Investment Factor would be so high (in all likelihood a negative value) that the Annual Percent ROI would be 0%.

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

The applicant did not state in its application, if it considered any alternative methods, equipment, and costs for achieving the same pollution control objective.

However, control of emissions of particulate matter and other gaseous compounds such as formaldehyde, using a wet scrubber is traditionally considered to be a practical and cost-effective method of controlling air emissions.

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

The applicant did not provide any information about the gross annual income and annual operating expenses for the claimed facility.

However, based on knowledge of operations of similar wet scrubbing systems, it can be reasonably concluded that the applicant will not generate any income from the claimed facility, whereas the applicant will certainly have annual operating expenses for running the claimed facility.

5) Other factors which are relevant in establishing the portion of the actual cost of the facility properly allocable to the prevention, control or reduction of air pollution.

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

The actual cost of the facility properly allocable to pollution control as determined by using this factor or these factors is 100%.

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 principal purpose of the facility is to comply with a requirement imposed by the Department to prevent, control, or reduce air pollution.
- c. The facility complies with the Department statutes and 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 \$366,710 with 100% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4676.

Anurag Gupta : PRC Environmental Management, Inc. February 6, 1997 Edited February 13, 1997 DPK Edited May 12, 1997 MCV - Incorporated Accountant's Statement

SYMONDS, EVANS & LARSON, P.C. CERTIFIED PUBLIC ACCOUNTANTS

REPORT OF INDEPENDENT ACCOUNTANTS ON APPLYING AGREED-UPON PROCEDURES TO POLLUTION CONTROL TAX CREDIT APPLICATION NO. TC-4676

Environmental Quality Commission 811 S.W. Sixth Avenue Portland, Oregon 97204

We have performed the procedures enumerated below, which were agreed to by Smurfit Newsprint Corporation (the Company); the State of Oregon, Department of Environmental Quality (the DEQ); and the Environmental Quality Commission, solely to assist you with respect to the Company's Pollution Control Tax Credit Application No. TC-4676 (the Application) filed with the DEQ for the Air Pollution Control Facility in Philomath, Oregon (the Facility). This engagement to apply agreed-upon procedures was performed in accordance with standards established by the American Institute of Certified Public Accountants. The sufficiency of the procedures is solely the responsibility of the specified users of the report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The Application has a claimed Facility cost of \$403,857. Our procedures and findings are as follows:

Procedures:

- We read the Application, the Oregon Revised Statutes (ORS) on Pollution Control Facilities Tax Credits – Sections 468.150 through 468.190 (the Statutes) and the Oregon Administrative Rules (OAR's) on Pollution Control Tax Credits – OAR 340-16-005 through OAR 340-16-050.
- 2. We inspected vendor invoices which aggregated approximately 94% of the adjusted costs of the Facility.
- 3. We discussed certain components of the Application, the Statutes and OAR's with Maggie Vandehey and David Kauth of the DEQ.
- 4. We discussed certain components of the Application with Michael Hibbs and Noemi McKee of the Company and Anurag Gupta of Tetra Tech Environmental Management, Inc., a contractor for the DEQ.
- 5. We toured the Facility with Mr. Hibbs.

SYMONDS, EVANS & LARSON, P.C. CERTIFIED PUBLIC ACCOUNTANTS

- 6. We requested that Company personnel confirm the following assertions:
 - A) Internal labor costs included in the Application were based on employees' actual pay rates.
 - B) The Company presently derives no income or cost savings from operating the Facility.
 - C) All supply costs included in the Application related to the installation of the Facility and did not include ongoing operating supplies.
 - D) No previously existing equipment was sold as a result of the installation of the Facility.
 - E) The capacity of the Facility is adequate for the Company's present operations and does not include significant capacity for potential future operations.
 - F) In accordance with ORS Section 468.155(2)(e), the Facility is not a "replacement or reconstruction of all or a part of any facility for which a pollution control facility certificate has previously been issued..."
 - G) Costs incurred for the refabrication of certain used equipment used in the pollution control process were necessary in order to prepare the equipment for its intended use. The cost of the used equipment plus the required refabrication costs were in the aggregate less than the costs to acquire new equipment.
 - H) The actual construction costs of the Facility exceeded the Company's budgeted costs due to the fact that this was the Company's first pollution control facility of this type, and the original cost was underestimated.
 - Engineering costs paid to CH2M Hill of \$48,289 related to the planning and design of certain components of the Facility and the testing and measuring of emissions during the construction phase of the Facility.

Findings:

1. through 5.

As a result of applying these procedures, we noted that the Application should be adjusted for the following non-allowable costs:

Miscellaneous costs which were not related to the Facility	\$ 7,674
Costs related to equipment not being used	7,178
Costs related to the repair of faulty equipment	22,295
Total non-allowable costs	\$ 37,147

Accordingly, the allowable costs for the Application should be decreased to \$366,710.

6. Company personnel confirmed in writing that such assertions were true and correct.

SYMONDS, EVANS & LARSON, P.C. certified public accountants

We were not engaged to, and did not, perform an audit, the objective of which would be the expression of an opinion on the specified elements, accounts or items. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the use of the specified users above and should not be used by those who have not agreed to the procedures and taken responsibility for the sufficiency of the procedures for their purposes.

Symonds, Evans + Larson, P.C.

May 5, 1997

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Smurfit Newsprint Corporation Cladwood Division 351 North 15 Street PO Box 1149 Philomath, Oregon 97370

The applicant owns and operates a manufacturing plant that utilizes waste newsprint and wood shavings for manufacture of solid panels. The plant is located 5 miles west of Corvallis on Highway 20/34 on North 15 Street in Philomath, Benton County, Oregon.

Application was made for tax credit for an air pollution control facility.

2. Description of Facility

The claimed facility consists of a Baghouse that was installed to control emissions of particulate matter from the exhaust of Cyclones #1, #4, and #5 at the Philomath plant. The plant utilizes waste newsprint and wood shavings for manufacture of solid panels that can be cut into exterior rated siding, garage door inserts, and other decorative components. Cyclones # 1, #4, and #5 recover the wood particles from various processes at the plant for reuse and recycle.

Claimed Facility Cost: \$245,846

Accountant's Certification was provided.

The applicant indicated the useful life of the facility is 23 years.

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 October 31, 1994 and placed into operation the same day. The application for final certification was received by the Department on October 15, 1996, within two years of substantial completion of the facility.

The application was found to be complete on February 4, 1997.

4. Evaluation of Application

a. Rationale For Eligibility

The claimed facility consists of a Western Pneumatics Model 542 Baghouse (Serial #128 9613220), that was installed to control emissions of particulate matter (wood particles) from the exhaust of Cyclones #1, #4, and #5 at the Philomath plant.

The applicant has estimated that the installation of the baghouse results in a reduction of about 2.5 pounds per hour or 9.9 tons per year (based on operation of the plant for 24 hours per day and 330 days per year) of particulate matter emissions.

Prior to the installation of the baghouse, the exhaust from Cyclone #1, which contains wood particles, was vented to the atmosphere without the use of any air pollution control equipment. Exhaust from Cyclones #4 and #5 was exhausted to a high-efficiency wet cyclone along with the exhaust from Cyclones #2 and #3. The high-efficiency wet cyclone is now only used for controlling air contaminant emissions from Cyclones #2 and #3.

The primary purpose of the baghouse is therefore to control emissions of particulate matter from the exhaust of Cyclones #1, #4, and #5.

The principal purpose for installation of the baghouse was to comply with a requirement imposed by the Department to prevent, control, or reduce air pollution.

b. Eligible Cost Findings

In determining the percentage of the certified 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 facility recovers about 9.9 tons per year of wood particles for reuse or for use as a fuel. The applicant stated that at the rate of \$6.52 per ton, the value of the waste products recovered is about \$64.55 per year.

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

The applicant did not provide any information about the annual operating expenses for the claimed facility. The applicant indicated that the useful life of the claimed facility is 23 years but did not provide the return on investment (ROI) calculations. Elsewhere in the application, the applicant has also indicated that the total value of the recovered wood particles is only \$64.55 per year.

However, based on knowledge about operations of a baghouse for controlling emissions of wood particles, it can be reasonably assumed that the Return on Investment Factor would be so high that the Annual Percent ROI would be 0%.

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

The applicant did not state in its application, if it considered any alternative methods, equipment, and costs for achieving the same pollution control objective.

However, control of particulate matter emissions using a baghouse is traditionally considered to be the most practical and cost-effective means of controlling particulate matter emissions at woodworking facilities.

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

The applicant indicated that installation of the baghouse would result in the recovery of about 9.9 tons per year of wood particles, which have a market value of about \$64.55 per year.

5) Other factors which are relevant in establishing the portion of the actual cost of the facility properly allocable to the prevention, control or reduction of air pollution.

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

The actual cost of the facility properly allocable to pollution control as determined by using this factor or these factors is 100%.

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 principal purpose of the facility is to comply with a requirement imposed by the Department to prevent, control, or reduce air pollution.
- c. The facility complies with the Department statutes and 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 \$245,846 with 100% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4677.

Anurag Gupta : PRC Environmental Management, Inc. February 4, 1997 Edited February 13, 1997 DPK

Application TC-4679

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

S & H Logging 20200 SW Stafford Rd. Tualatin, Oregon 97062-9731

The applicant operates a yard debris processing company. Application was made for pollution control facility tax credit certification.

2. Description of Facility

The facility consists of a John Deere 690E Excavator with a model 42 Piranha Grapple, serial # DW690EL546757 used to handle yard debris which is being processed into garden mulch.

Total cost claimed for loader \$159,600

The actual cost of the facility was certified by an independent public accountant. Copies of the invoice and purchase agreements were also provided.

3. <u>Procedural Requirements</u>

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

The facility met all statutory deadlines in that:

- a. The components were purchased between November 21, 1994.
- b. The facility was placed into operation on December 1, 1994.
- c. The application for tax credit was submitted to the Department on October 17, 1996, within two years of substantial completion of the facility.
- d. The application was filed complete on February 14, 1997.

4. Evaluation of Application

- a. The sole purpose of the facility is to handle yard debris as part of a process to recycle it into garden mulch. This yard debris recycling program is a part of a material recovery process which obtains useful resources from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d).
- b. Eligible Cost Findings

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

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

The facility is used 100% of the time for processing of yard debris, a material recovery process.

- 2) <u>The estimated annual percent return on the investment in the facility.</u>
 - A) The applicant has claimed an adjusted facility cost of \$159,600. The Department has not identified any ineligible costs relating to the excavator.
 - B) Annual Percentage Return on Investment

The claimed facility represents 8.86% of the total business assets. The applicant has calculated the expenses and income for the claimed facility as a prorated portion of total business income and expenses. This results in an average annual cash flow for the facility of only \$297.

The useful life of the equipment is claimed as 5 years.

The annual return on investment from Table 1, OAR 340-16 is 0%.

The portion of the adjusted cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. Summation

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of the excavator is recycling of yard debris.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that Pollution Control Facility Tax Credit Certificate bearing the cost of \$159,600 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4679.

William R. Bree TAX\TC4679RR.STA (503) 229-6046 February 7, 1997

Application No. TC-4710

State of Oregon Department of Environmental Quality

RECLAIMED PLASTIC TAX CREDIT TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

WWDD Partnership 230 NW 10th Portland, OR 97209

The applicant is a partnership which leases the claimed plastic recycling equipment to Denton Plastic, Inc. Denton Plastic, Inc. is a recycling company located at 4427 NE 158th, Portland Oregon 97230. The claimed equipment will be used for plastic recycling at that location.

Application was made for reclaimed plastic tax credit.

2. Description of Equipment, Machinery or Personal Property

The claimed equipment consists of a 42 foot, 1979 Hobbs Trailer to be used for collection of reclaimed plastic.

The claimed facility investment costs: \$2,975

A copy of the sales invoice and check for payment for the trailer were provided.

3. <u>Procedural Requirements</u>

The investment is governed by ORS 468.451 through 468.491, and by OAR Chapter 340, Division 17.

The investment met all statutory deadlines in that:

- a. The request for preliminary certification was received on December 3, 1996. The 30-day waiting period was waived and the request for preliminary certification was approved on December 6, 1996.
- b. The investment was made on January 2, 1997.
- c. The request for final certification was submitted on March 25, 1997, and was filed complete on March 25, 1997.

4. Evaluation of Application

- a. The investment is eligible because the equipment is necessary to process reclaimed plastic.
- b. Allocable Cost Findings

In determining the portion of the investment costs properly allocable to reclaiming and recycling plastic material, the following factors from ORS 468.486 have been considered and analyzed as indicated:

1) The extent to which the claimed collection, transportation, processing or manufacturing process is used to convert reclaimed plastic into a salable or usable commodity.

The equipment is to be used 100% of the time for collecting reclaimed plastic.

 Any other factors which are relevant in establishing the portion of the actual cost of the investment properly allocable to the collection, transportation or processing of reclaimed plastic or to the manufacture of a reclaimed plastic product.

No other factors were considered relevant.

The actual cost of the investment properly allocable to collecting reclaimed plastic as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The investment was made in accordance with all regulatory deadlines.
- b. The investment is eligible for final tax credit certification in that the equipment is necessary to collect reclaimed plastic.
- c. The qualifying business complies with DEQ statutes and rules.
- d. The portion of the investment cost that is properly allocable to reclaiming and recycling plastic is 100%.

6. Director's Recommendation

Based upon these findings, it is recommended that a Reclaimed Plastic Tax Credit Certificate bearing the cost of \$2,975 with 100% allocated to reclaiming plastic material, be issued for the investment claimed in Tax Credit Application No. TC-4710.

Application No. TC-4711

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Double J, Inc. 655 E Arlington Gladstone, OR 97027

The applicant owns and operates an automotive service and repair shop in Gladstone, Oregon.

Application was made for tax credit for an air pollution control facility which is owned by the applicant.

2. <u>Description of Facility</u>

Facility is a machine which removes and cleans auto air conditioner coolant. The machine is self contained and includes pumps, tubing, valves and filters which rid the spent coolant of oil, excess air, water, acids and contaminant particles.

The applicant has identified the useful life of the equipment to be 3 years.

Claimed Facility Cost: \$4,199 (Costs have been documented)

3. <u>Procedural Requirements</u>

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

Installation of the facility was substantially completed on October 22, 1996. The facility was placed into operation on October 22, 1996. The application for final certification was submitted to the Department on December 10, 1996, within two years of substantial completion of the facility. The application was found to be complete on April 15, 1996.

4. <u>Evaluation of Application</u>

a. The facility is eligible because the sole purpose of the facility is to reduce air pollution. This reduction is accomplished by capturing and/or recycling air contaminants, as defined in ORS 468.275.

Eligible equipment must be certified by Underwriters Laboratory (UL) as meeting the requirements and specifications of UL1963 and the Society of Automotive Engineers (SAE) standards, J2210, or other requirements and specifications determined by the Department as being equivalent. The facility meets these requirements.

b. Eligible Cost Findings

In determining the percent of the 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 recovery and recycling machine serves two purposes. It prevents the release of spent auto A/C coolant to the environment, thereby meeting Department regulations requiring capture of this air contaminant. Second, it provides a means to recover and clean waste coolant for reuse as an auto A/C coolant.

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

The percent return on investment from facility use was calculated using coolant cost and retrieval rate data from the applicant and generic cost of facility operations estimated by the Department.

Specifically, the applicant estimated the income to applicant from the sale of recycled coolant at \$13.95/pound. The applicant estimated an annual coolant recovery rate of 70 pounds.

In estimating the operating costs for use of the recovery and recycling machine, the Department developed a standardized methodology which considers the following factors:

- o Electricity consumption of machine
- o Additional labor to operate machine
- o Machine maintenance costs

Based on these considerations, the applicant estimated the return on investment to be less than zero, in that machine operating costs exceeded income from the use of the machine.

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

The applicant has identified no alternatives.

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

There are savings from the facility to recover and reuse coolant. The applicant may use the recycled coolant in customer vehicles. In this case the savings are tied to the displaced cost of virgin coolant. Alternately, the applicant could sell the coolant to a second shop where the coolant is used. In this case the savings to the applicant are tied to the sales price of recycled coolant.

However, for this applicant increases in business operations and maintenance costs exceeded facility savings. These cost estimates are discussed in 2) above.

5) Any other factors which are relevant in establishing the portion of the actual cost of the facility properly allocable to the prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or properly disposing of used oil.

A distinct portion of this automobile air conditioning coolant recovery and recycling equipment makes an insignificant contribution to the principal purpose of the claimed facility. This coolant recovery equipment has the capability to return (recharge) coolant to automobile air conditioning systems. Recharge capabilities in coolant recovery and recycling equipment is not required by state or federal law. The additional expense incurred in the purchase of equipment with recharge capabilities is not allocable to pollution control. The Department estimates the additional expense incurred is \$700.00.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 83%.

- 5. <u>Summation</u>
 - a. The facility was constructed in accordance with all regulatory deadlines.
 - b. The facility is eligible for tax credit certification in that the sole purpose of the facility is to reduce air pollution.
 - c. The facility complies with DEQ statutes and rules.
 - d. The portion of the facility cost that is properly allocable to pollution control is 83%.
- 6. Director's Recommendation

Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$4,199 with 83% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. 4711.

Dennis E. Cartier SJO Consulting Engineers

April 15, 1997

Application No. TC-4719

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Larry Lauder, Inc 2 Monroe Parkway Lake Oswego, OR 97034

The applicant owns and operates a gasoline service station with three service bays to repair automobiles and light trucks in Lake Oswego, Oregon.

Application was made for tax credit for an air pollution control facility which is owned by the applicant.

2. <u>Description of Facility</u>

Facility is a machine which removes and cleans auto air conditioner coolant. The machine is self contained and includes pumps, tubing, valves and filters which rid the spent coolant of oil, excess air, water, acids and contaminant particles.

The applicant has identified the useful life of the equipment to be 3 years.

Claimed Facility Cost: \$3790 (Costs have been documented)

3. <u>Procedural Requirements</u>

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

Installation of the facility was substantially completed on June 27, 1996. The facility was placed into operation on June 27, 1996. The application for final certification was submitted to the Department on January 6, 1997, within two years of substantial completion of the facility. The application was found to be complete on April 14,1997.

4. Evaluation of Application

a. The facility is eligible because the sole purpose of the facility is to reduce air pollution. This reduction is accomplished by capturing and/or recycling air contaminants, as defined in ORS 468.275.

Eligible equipment must be certified by Underwriters Laboratory (UL) as meeting the requirements and specifications of UL1963 and the Society of Automotive Engineers (SAE) standards, J2210, or other requirements and specifications determined by the Department as being equivalent: The facility meets these requirements.

b. Eligible Cost Findings

In determining the percent of the 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 recovery and recycling machine serves two purposes. It prevents the release of spent auto A/C coolant to the environment, thereby meeting Department regulations requiring capture of this air contaminant. Second, it provides a means to recover and clean waste coolant for reuse as an auto A/C coolant.

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

The percent return on investment from facility use was calculated using coolant cost and retrieval rate data from the applicant and generic cost of facility operations estimated by the Department.

Specifically, the applicant estimated the income to applicant from the sale of recycled coolant at \$13.95/pound. The applicant estimated an annual coolant recovery rate of 70 pounds.

In estimating the operating costs for use of the recovery and recycling machine, the Department developed a standardized methodology which considers the following factors:

- o Electricity consumption of machine
- o Additional labor to operate machine
- o Machine maintenance costs

Based on these considerations, the applicant estimated the return on investment to be less than zero, in that machine operating costs exceeded income from the use of the machine.

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

The applicant has identified no alternatives.

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

There are savings from the facility to recover and reuse coolant. The applicant may use the recycled coolant in customer vehicles. In this case the savings are tied to the displaced cost of virgin coolant. Alternately, the applicant could sell the coolant to a second shop where the coolant is used. In this case the savings to the applicant are tied to the sales price of recycled coolant.

However, for this applicant increases in business operations and maintenance costs exceeded facility savings. These cost estimates are discussed in 2) above.

5) Any other factors which are relevant in establishing the portion of the actual cost of the facility properly allocable to the prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or properly disposing of used oil.

A distinct portion of this automobile air conditioning coolant recovery and recycling equipment makes an insignificant contribution to the principal purpose of the claimed facility. This coolant recovery equipment has the capability to return (recharge) coolant to automobile air conditioning systems. Recharge capabilities in coolant recovery and recycling equipment is not required by state or federal law. The additional expense incurred in the purchase of equipment with recharge capabilities is not allocable to pollution control. The Department estimates the additional expense incurred is \$700.00.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 82%.

- 5. <u>Summation</u>
 - a. The facility was constructed in accordance with all regulatory deadlines.
 - b. The facility is eligible for tax credit certification in that the sole purpose of the facility is to reduce air pollution.
 - c. The facility complies with DEQ statutes and rules.
 - d. The portion of the facility cost that is properly allocable to pollution control is 82%.

6. Director's Recommendation

Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$3790 with 82% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. 4719.

Dennis E. Cartier SJO Consulting Engineers

April 14, 1997

Application No. T- 4720

State of Oregon Departmental of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Bernard Van Dyke 2590 NW Martin Road Forest Grove, OR 97116

The applicant owns and operates a crop and livestock farm in Forest Grove.

Applicant was made for tax credit for a water pollution control facility.

2. <u>Description of Facility</u>

The claimed facility consists of a below ground 48 foot diameter by 10 foot deep reinforced concrete tank, a concrete apron pad 15 foot by 25 foot long connects the tank to the barn, an agitator pump, a liquid manure spreader and waste transfer piping.

Clamed Facility Cost: \$15,583

3. <u>Procedural Requirements</u>

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

The facility met statutory deadline in that construction of the facility was substantially completed on May 3, 1995, application was submitted on January 21, 1997 and found to be complete on May 3, 1997 — within 2 years of substantial completion of the facility.

4. <u>Evaluation of Application</u>

a. Eligibility

The facility is eligible because the sole purpose of the facility is to control substantial quantity of water pollution. This control is accomplished by the use of a waste treatment system that provides storage of animal wastes during the rainy season.

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Prior to the construction of the claimed facility animal wastes were applied to the crops during the rainy season when leaching and surface water run-off was high.

b. Eligible Cost Findings

In determining the percent of the 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 facility does not recover or convert waste products into salable commodity.

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

There is no return on investment for the facility.

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

Alternatives considered were a lagoon system, a containment structure made of a glass-lined metal tank and above ground instead of below ground. The lagoon system was dropped because of improper soil type, excessive land and possible odor problems. The metal tank was too expensive. An above ground containment structure did not allow for gravity flow of wastes and required a transfer pump.

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

There are no savings or increase in costs as a result of construction of the facility.

Application No. T- 4720 Page 3

5) Any other factors which are relevant in establishing the portion of the actual cost of the facility properly allocable to the prevention, control or reduction of air, water or noise pollution or solid or hazardous waste or to recycling or properly disposing of used oil.

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

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

- 5. <u>Summation</u>
 - a. The facility was considered in accordance with all regulatory deadlines.
 - b. The facility is eligible for the tax credit certification in that the sole purpose of the facility is to reduce a substantial quantity of water pollution.
 - c. The facility complies with DEQ statutes and rules.
 - d. The portion of the facility cost that is properly allocable to pollution control is 100%.

6. <u>Director's Recommendation</u>

Based upon these findings, it is recommended that a Pollution Control facility certificate bearing the cost of \$15,583 with 100% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T- 4720.

Dewey W. Darold, R.S. 503-229-5189 May 3, 1997

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

United Disposal Service, Inc. 2215 N Front Street Woodburn, Oregon 97071

The applicant operates a solid waste collection and recycling service in Marion, Clackamas and Washington Counties.

Application is for a pollution control facility tax credit certification.

2. <u>Description of Facility</u>

The facility consists of five 30 yard drop boxes, serial # 9230 to 9234.

Total cost claimed is \$14,959

Invoices and copies of checks documenting the cost of the facility were provided.

3. <u>Procedural Requirements</u>

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on October 15, 1996.
- b. The application for tax credit was submitted to the Department on February 3, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

a. The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The drop boxes will be located at recycling service customer sites to recycle waste cardboard that would otherwise be disposed of as solid waste.

b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) The estimated annual percent return on the investment in the facility.
 - A) The applicant has claimed a facility cost of \$14,959.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of these drop boxes is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$14,959 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4724.

William R. Bree TAX\TC4724RR.STA (503) 229-6046 February 13, 1997

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Corvallis Disposal Co. PO Box 1 Corvallis, Oregon 97339

The applicant operates solid waste collection and recycling service in Benton County.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of ten 2-yard front load containers with lids, model # M73T, serial # 127674 to 127683

Total cost claimed is \$3,111

Invoices and copies of checks documenting the cost of the facility were provided.

3. Procedural Requirements

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on May 1, 1995.
- b. The application for tax credit was submitted to the Department on February 7, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- a. The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The containers will be located at recycling service customer sites to recycle waste cardboard that would otherwise be disposed of as solid waste.
- b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) The estimated annual percent return on the investment in the facility.
 - A) The applicant has claimed a facility cost of \$3,111.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of these containers is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$3,111 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4730.

William R. Bree TAX\TC4730RR.STA (503) 229-6046 February 14, 1997

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Corvallis Disposal Co. PO Box 1 Corvallis, Oregon 97339

The applicant operates a solid waste collection and recycling service in Benton County.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of twenty 2-yard front load containers with lids, model # M73T, serial # 130879-130888 & 130938-130947; nine 4-yard front load containers, model # M75T, serial # 130948-130957; five 6-yard front load containers, model # M76T, serial # 130958-130962.

Total cost claimed is \$13,851

Invoices and copies of checks documenting the cost of the facility were provided.

3. <u>Procedural Requirements</u>

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on August 14, 1995.
- b. The application for tax credit was submitted to the Department on March 5, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- a. The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The containers will be located at recycling service customer sites to recycle waste cardboard that would otherwise be disposed of as solid waste.
- b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) The estimated annual percent return on the investment in the facility.
 - A) The applicant has claimed a facility cost of \$13,851.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of these containers is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$13,851 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4738.

William R. Bree TAX\TC4738RR.STA (503) 229-6046 March 13, 1997

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Corvallis Disposal Co. PO Box 1 Corvallis, Oregon 97339

The applicant operates a solid waste collection and recycling service in Benton County.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of two Vulcan on-board Scale systems for cardboard recycling collection trucks, model # R100, Epson computer model # M-H804AEW, serial # 47F0001788.

Total cost claimed is \$17,874

Invoices and copies of checks documenting the cost of the facility were provided.

3. Procedural Requirements

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on May 8, 1995.
- b. The application for tax credit was submitted to the Department on March 11, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- a. The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The scales will be used in the collection of waste cardboard that would otherwise be disposed of as solid waste.
- b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) The estimated annual percent return on the investment in the facility.
 - A) The applicant has claimed a facility cost of \$17,874.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of these scales is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility certificate bearing the cost of \$17,874 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4739.

William R. Bree TAX\TC4739RR.STA (503) 229-6046 March 17, 1997

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Corvallis Disposal Company PO Box 1 Corvallis, Oregon 97339

The applicant operates a solid waste collection and recycling service in Benton County.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of 576 101-gallon Toter carts, model # 60501, Serial # YW008206 - YW008782 and 100 90-gallon semi-automated Toter carts, model # 74096, Serial # Q071582 - Q07168.

Total cost claimed is \$43,199

Invoices and copies of checks documenting the cost of the facility were provided.

3. <u>Procedural Requirements</u>

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed in operation on June 1, 1995.
- b. The application for tax credit was submitted to the Department on March 14, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- a. The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The collection containers are used in the collection of yard debris and other recyclable materials that would otherwise be disposed of as solid waste.
- b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) The estimated annual percent return on the investment in the facility.
 - A) The applicant has claimed a facility cost of \$43,199.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of these containers is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$43,199 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4740.

William R. Bree TAX\TC4740RR.STA (503) 229-6046 March 20, 1997

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

United Disposal 2215 N Front Street Woodburn, Oregon 97071

The applicant operates a solid waste collection and recycling service in Marion, Clackamas and Washington Counties.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of one Marathon Model V06030HD baler, serial # 91901.

Total cost claimed is \$9,191

Invoices and copies of checks documenting the cost of the facility were provided.

3. <u>Procedural Requirements</u>

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on September 10, 1996.
- b. The application for tax credit was submitted to the Department on March 17, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- a. The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The baler is located at Siltec Silicon, Salem, Oregon, a recycling service customer, and is used to recycle waste cardboard that would otherwise be disposed of as solid waste.
- b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) The estimated annual percent return on the investment in the facility.
 - A) The applicant has claimed a facility cost of \$9,191.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of the baler is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$9,191 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4741.

William R. Bree TAX\TC4741RR.STA (503) 229-6046 March 20, 1997

Application No. T-4743

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT POLLUTION PREVENTION PILOT PROGRAM

1. <u>Applicant</u>

Mailing Address

The Cleanery - Santa Clara 88 Division Street Eugene, Oregon 97404 Earl Eckstrom & Assoc., Inc. 2523 N Hayden Island Dr. Portland, Oregon 97217

The applicant owns and operates a dry-cleaning shop located at 88 Division Street, Eugene, Oregon.

Application was made for tax credit for an air pollution prevention facility.

2. <u>Description of Facility</u>

The claimed facility is a new dry-cleaning machine using Exxon DF 2000 solvent, which was installed as a replacement for a dry-cleaning machine which used percholoroethylene as a solvent. The new machine eliminates the emissions of perc to the atmosphere.

Claimed Facility Cost: \$72,898

3. <u>Procedural Requirements</u>

The facility is governed by ORS 468A.095 through 468A.098, and by OAR Chapter 340, Division 16.

The facility met all regulatory deadlines in that:

Installation of the pollution prevention facility was substantially completed on April 4, 1996. The application for final certification was received by the Department on March 21, 1997. The application was found to be complete on April 3, 1997, within one year of installation of the facility.

4. <u>Evaluation of Application</u>

Rationale For Eligibility

(1) The pollution prevention facility is eligible because it meets the requirement of avoiding the requirements of the National Emission Standard for Hazardous Air Pollutants (NESHAP), specifically 40 CFR 63.320 to 63.325 national perchloroethylene air emissions standard for dry cleaning facilities.

The new dry-cleaning facility was installed between January 1, 1996 and December 31, 1999.

The facility does not qualify for a pollution control tax credit under ORS 468.165 and 468.170.

- (2) The owner installed equipment which resulted in the elimination of perchloroethylene use and is in-turn not subject to the NESHAP.
- (3) The dry cleaning facility has registered under the Clean Air Act Title III National Emissions Standards for Hazardous Air Pollutants.

5. <u>Summation</u>

- a. The pollution prevention facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for final tax credit certification in that it meets the definition of a pollution prevention facility for this pilot program.
- c. The applicant indicated that the tax credit program was not a determining factor in installing this equipment.

6. Director's Recommendation

Based upon these findings, it is recommended that a Pollution Prevention Facility Certificate bearing the cost of \$ 72,898 be issued for the facility claimed in Tax Credit Application No. T-4743.

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STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Albany-Lebanon Sanitation, Inc. PO Box 1929 Albany, Oregon 97321

The applicant operates a solid waste collection and recycling service in Linn and Benton Counties.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of twenty 2-yard frontloader containers, model # M73T, serial # 127267 - 127276 & 127501 - 127510; twenty 4-yard frontloader containers, model # 75T.

Total cost claimed is \$13,242

Invoices and copies of checks documenting the cost of the facility were provided.

3. Procedural Requirements

The facility is governed by ORS 468,150 - 468,190 and by OAR Chapter 340, Division 16.

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on April 30, 1995.
- b. The application for tax credit was submitted to the Department on April 3, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- a. The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The collection containers are located at recycling service customer sites in Albany and Lebanon, Oregon, and are used to collect waste cardboard and other recyclable materials that would otherwise be disposed of as solid waste.
- b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) The estimated annual percent return on the investment in the facility.
 - A) The applicant has claimed a facility cost of \$13,242.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of the containers is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$13,242 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4748.

William R. Bree TAX\TC4748RR.STA (503) 229-6046 April 4, 1997

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Albany-Lebanon Sanitation, Inc. PO Box 1929 Albany, Oregon 97321

The applicant operates a solid waste collection and recycling service in Linn and Benton Counties.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of three hundred sixty 95 gallon Schaefer yard debris collection carts, model # USD-C95, serial # 11337-11696.

Total cost claimed is \$18,720

Invoices and copies of checks documenting the cost of the facility were provided.

3. Procedural Requirements

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on May 22, 1995.
- b. The application for tax credit was submitted to the Department on April 11, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The collection containers are located at residential recycling service customer sites in Albany and Lebanon, Oregon, and are used to collect yard debris that would otherwise be disposed of as solid waste.
- b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) The estimated annual percent return on the investment in the facility.
 - A) The applicant has claimed a facility cost of \$18,720.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of the containers is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$18,720 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4750.

William R. Bree TAX\TC4750RR.STA (503) 229-6046 April 22, 1997

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Lehl Disposal Company, Inc. 24899 S Central Point Road Canby, Oregon 97013

The applicant operates a solid waste collection and recycling service in the Portland metropolitan area.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of a 1994 GMC collection truck equipped with an 18 foot dump box, model # C7H042, serial # 1GDM7H1J1RJ519158, License # 510177.

Total cost claimed is \$34,946.

An independent accountant's certification documenting the cost of the facility was provided.

3. Procedural Requirements

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on June 19, 1996.
- b. The application for tax credit was submitted to the Department on April 23, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- a. The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The claimed vehicle is used to collect compostable construction debris from service customer sites in the Portland metropolitan area.
- b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) The estimated annual percent return on the investment in the facility.
 - A) The applicant has claimed a facility cost of \$34,946.
 The Department as identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. Summation

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of the truck is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$34,946 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4657.

William R. Bree TAX\TC4757RR.STA (503) 229-6046 April 22, 1997

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Tri County Construction Clean-up, Inc. PO Box 906 Canby, Oregon 97013

The applicant operates a solid waste collection and recycling service in the Portland metropolitan area.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of a 1994 GMC Collection truck equipped with an 18 foot dump box., model # C7H042, serial # 1GDM7H1J1RJ519791, license # 513321.

Total cost claimed is \$34,866.

An Independent accountant's certification, invoices and copies of checks documenting the cost of the facility were provided.

3. Procedural Requirements

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on May 2, 1996.
- b. The application for tax credit was submitted to the Department on April 23, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The collection vehicle is used at construction sites in the Portland metropolitan area.
- b. Eligible Cost Findings

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

The facility is used 100% of the time for recycling, a material recovery process.

- 2) <u>The estimated annual percent return on the investment in the facility.</u>
 - A) The applicant has claimed a facility cost of \$34,866.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. Summation

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of the truck is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$34,866 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4758.

William R. Bree TAX\TC4758RR.STA (503) 229-6046 April 28, 1997

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. <u>Applicant</u>

Margarette Eckstein Burns Junction Station 4740 US Hwy 95 West Jordan Valley, OR 97910

The applicant owns and operates a retail gas station at the above address, formerly UST facility No. 1611.

Application was made for a tax credit for a water pollution control facility involving underground storage tanks replaced by an aboveground storage tank system.

The applicant received a 75% not to exceed \$75,000 essential services grant through DEQ's Underground Storage Tank Financial Assistance Program for expenses claimed in this tax credit application. The required deduction of grant funds from the applicant's tax credit claim is summarized in Section 2 below.

2. <u>Description of Claimed Facility</u>

The claimed pollution control facilities described in this application are three doublewall aboveground tanks and fiberglass piping, spill containment basins, tank gauge system, automatic shutoff valves and sumps.

Claimed facility cost (Documentation of cost was provided) \$18,482

The above claimed facility cost is based on a total facility cost of \$73,929. The applicant subtracted grant funds received for the project prior to submitting this tax credit claim of \$18,482 using the Department's adjustment methodology.

Application No. TC-4759 Page 2

After adjusting for grant funds received, the Department concurs that \$18,482 is the actual facility cost to the applicant when an adjustment is made deducting an essential services grant previously awarded the project under DEQ's UST financial assistance program (see Attachment A for details of the calculation) with a breakdown as follows:

Claimed Facility Cost	Percent Adjustment	Adjusted Claimed Facility Cost
<u></u>		<u></u>
\$18,583	24.9994%	\$ 4,645
771	11	193
4,100	11	1,025
4,348	U	1,087
795		199
45,332	**	11,333
\$73,929	24.9994%	\$18,482
	Facility Cost \$18,583 771 4,100 4,348 795 45,332	Facility Cost Percent Adjustment \$18,583 24.9994% 771 " 4,100 " 4,348 " 795 " 45,332 "

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 December 1, 1996 and placed into operation on December 1, 1996. The application for certification was submitted to the Department on April 23, 1997, and was considered to be complete and filed on April 30, 1997, 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."

Pursuant to the above, the applicant installed:

- 1) For corrosion protection Doublewall aboveground tanks and fiberglass piping.
- 2) For spill and overfill prevention Spill containment basins, sumps and automatic shutoff valves.
- 3) For leak detection Tank gauge system.
- 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 chose the most cost effective method available. 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:	<u></u>		<u></u>	
Doublewall aboveground tanks				
and fiberglass piping	\$ 4,645	100%	\$ 4,645	
Spill & Overfill Prevention: Spill containment basins Automatic shutoff valves Sumps	193 1,087 199	100 100 100	193 1,087 199	
Leak Detection: Tank gauge system	1,025	100	1,025	
Labor, material, misc. parts	11,333	100	11,333	
	<u></u>			
Total	\$18,482	100%	\$18,482	

5. <u>Summation</u>

- 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 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 100%.

6. Director's Recommendation

Based upon these findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$18,482 with 100% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. TC-4759.

Barbara J. Anderson (503) 229-5870 April 30, 1997

ATTACHMENT A.

TAX CREDIT/GRANT ADJUSTED FACILITY COST WORKSHEET APPLICATION NO. TC-4759

\$65,501

Burns Junction 4740 US Hwy 95 West Jordan Valley, OR 97910 Facility ID No. 1611

A. TOTAL STATE GRANT AWARDED TO APPLICANT:

POLLUTION ADJUSTED UST PROJECT CONTROL EQUIPMENT WORK EQUIPMENT COSTS ELIGIBLE ELIGIBLE FOR (Using % B. PROJECT EQUIPMENT AND COSTS: TAX CREDIT in F. below) FOR GRANT \$3,787 Three doublewall aboveground tanks \$15,150 \$15,150 858 Fiberglass piping 3,433 3,433 Spill containment basins 771 771 193 4,100 4,100 1,025 Tank gauge system Sumps 795 795 199 Automatic Shutoff Valves 4,348 4,348 1,087 45,332 11,333 Labor & materials 45,332 Canopy, fence, CPA 11,077 0 0 0 Fuel pumps 2,328 0 -----.... _____ C. TOTAL PROJECT COST \$87,334 \$73,929 \$18,482

D. CALCULATION OF APPLICANT'S ACTUAL EQUIPMENT COST AND ADJUSTMENT PERCENT:

	 Equipment costs eligible for tax credit as a percent of total project cost: 	\$73,929 / 87,334 =	84.65%
	2. Portion of State grant applicable to equip- ment costs eligible for tax credit:	\$65,501 x .8465	\$55,447
E.	APPLICANT'S ACTUAL EQUIPMENT COST:	\$73,929 - 55,447 =	\$18,482
F.	Applicant actual equipt cost percent:	\$18,482 / 73,929 =	24.9994%

Application TC-4760

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Albany-Lebanon Sanitation, Inc. PO Box 1929 Albany, Oregon 97321

The applicant operates a solid waste collection and recycling service in Linn and Benton Counties.

Application is for a pollution control facility tax credit certification.

2. Description of Facility

The facility consists of 576 101-gallon Toter carts, model # 60501, serial # YB008053 - YB008629.

Total cost claimed is \$37,152.

Invoices and copies of checks documenting the cost of the facility were provided.

3. **Procedural Requirements**

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

The facility met all statutory deadlines in that:

- a. The facility purchased, installed and placed into operation on May 9, 1995.
- b. The application for tax credit was submitted to the Department on April 23, 1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- a. The sole purpose of the facility is to prevent or reduce a substantial amount of solid waste. This prevention or reduction uses a material recovery process which obtains useful material from material that would otherwise be solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The collection containers are located at recycling service customer sites in Albany and Lebanon, Oregon, and are used to collect yard debris that would otherwise be disposed of as solid waste.
- b. Eligible Cost Findings

In determining the percent of the 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 facility is used 100% of the time for recycling, a material recovery process.

- 2) <u>The estimated annual percent return on the investment in the facility.</u>
 - A) The applicant has claimed a facility cost of \$37,152.
 The Department has identified no ineligible costs relating to the facility.
 - B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used 100% of the time as part of a material recovery process so the portion of cost properly allocable is 100%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is 100%.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of the containers is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$37,152 with 100% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4760.

William R. Bree TAX\TC4760RR.STA (503) 229-6046 April 4, 1997

Application TC4761

STATE OF OREGON Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

United Disposal 2215 N. Front Street Woodburn, Oregon 97071

The applicant operated solid waste collection and recycling service in Marion, Clackamas and Washington Counties.

Application is for a pollution control facility tax credit certification.

2. <u>Description of Facility</u>

The facility consists of a marathon TC-2.5 Compactor, Serial # 39052.

Total cost claimed is \$23,779

An independent accountant's certification of the facility costs was provided. Invoices and copies of checks documenting the cost of the facility were provided.

3. Procedural Requirements

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

The facility met all statutory deadlines in that:

- a. The facility was installed on June 15, 1995 and placed in operation on July 1, 1995.
- A preliminary tax credit application was submitted to the Department on December 16, 1996,
- c. The application for tax credit was submitted to the Department on May 8,1997, within two years of substantial completion of the facility.

4. Evaluation of Application

- a. Facility Use
 - 1) The sole purpose of the facility when installed was to prevent or reduce a substantial amount of solid waste. This prevention or reduction results from the uses of a material recovery process which obtains useful material from what would otherwise have been solid waste, pursuant to Oregon Administrative Rule 340-16-025(1)(b) and (2)(d). The compactor is located at a recycling service customer site and is part of a cardboard recycling system.

- 2) The claimed facility, a new Marathon compactor, is used as part of a two unit system which allows the customer to separate and process both solid waste and recyclable cardboard. The new compactor was installed with the sole purpose to provide the customer with a compactor for cardboard. The customer now uses one compactor for cardboard and one for solid waste. At the customers choice he is using the old compactor for cardboard and the new compactor for solid waste.
- 3) The new compactor has a value of \$23,779 The old compactor has a present value of \$12,294 and a replacement value of \$24,589.
- 4) It is the applicant's position that the sole purpose of the investment in the claimed facility was to facilitate cardboard recycling. The customer has chosen a method of recycling which includes the use of the new compactor to process residue and the old compactor to process cardboard. The claimed facility is being use 100% of the time as part of a cardboard recycling program and should be granted a tax credit based on 100% of its value, \$23,779.
- 5) The Department position is that the sole purpose for installation of the facility was cardboard recycling, so the facility is eligible for tax credit. The facility is only one part of a two unit waste management system and is not being used to directly process the cardboard. Therefore, it should only receive a pollution control allocation that is proportional to the portion of the total system which is directly processing cardboard. This pollution control allocation should be limited to the actual cost of the claimed facility.

Cost of the new compactor	\$ 23,779
Present value of the old, cardboard, compactor	\$ 12,294
The total system cost	\$ 36,073
The new cardboard compactor represents 66% of	the total system cost

Portion of the applicant's investment allocable pollution control, 66% \$23,779 X .66 = \$15,694

b. Eligible Cost Findings

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

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

The facility is used the equivalent of 66% of the time for recycling, a material recovery process.

2) <u>The estimated annual percent return on the investment in the facility.</u>

- A) The applicant has claimed a facility cost of \$23,779.
 The Department as identified no ineligible costs relating to the facility.
- B) Annual Percentage Return on Investment

The facility falls under the provisions of ORS 468.190(3). The portion of the actual cost properly allocable to pollution control is calculated as the proportion that the ratio of the time the facility is used for recycling bears to the entire time the facility is used for any purpose. The facility is used the equivalent of 66% of the time as part of a material recovery process so the portion of cost properly allocable is 66%.

The actual cost of the facility properly allocable to pollution control as determined by using these factors is \$15,694.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for tax credit certification in that the sole purpose of these drop boxes is recycling of a material that would otherwise be disposed of as solid waste.
- c. The facility complies with DEQ statutes 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 the findings, it is recommended that a Pollution Control Facility certificate bearing the cost of \$23,779 with 66% allocable to pollution control be issued for the facility claimed in Tax Credit Application TC-4761.

William R. Bree TAX\TC4761RR.STA (503) 229-6046 May 8, 1997

Application No. T-4762

State of Oregon Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT POLLUTION PREVENTION PILOT PROGRAM

1. <u>Applicant</u>

Campbell's Cleaners, Inc. 1120 NW 9th Street Corvallis, OR 97330

The applicant owns and operates a clothes cleaning shop located 1120 NW 9th Street Corvallis, Oregon.

Application was made for tax credit for an air pollution prevention facility.

2. <u>Description of Facility</u>

The claimed facility is a new multiprocess wet cleaning system which was installed as a replacement for approximately 55% of the cleaning capacity of the existing perc drycleaning machine. The wet cleaning system reduces the emissions of perc by cleaning the clothes with water and detergents instead of dry-cleaning solvent.

Claimed Facility Cost: \$21,605

3. <u>Procedural Requirements</u>

The facility is governed by ORS 468A.095 through 468A.098, and by OAR Chapter 340, Division 16.

The pollution prevention facility met all regulatory deadlines in that:

Installation of the facility was substantially completed on December 20, 1996. The application for final certification was received by the Department on April 25, 1997. The application was found to be complete on May 1, 1997, within one year of installation of the facility.

4. <u>Evaluation of Application</u>

Rationale For Eligibility

(1) The pollution prevention facility is eligible because a multiprocess wet cleaning system is a recognized alternative to perc dry-cleaning and it was installed as a replacement for part of the capacity of an existing perc machine. Also, the new process is not subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP), specifically 40 CFR 63.320 to 63.325 national perchloroethylene air emissions standard for dry cleaning facilities. The entire facility qualifies as a small area source since perc use is less than 140 gallons per year

The pollution prevention facility was installed between January 1, 1996 and December 31, 1999.

The facility does not qualify for a pollution control tax credit under ORS 468.165 and 468.170.

- (2) The facility installed a multiprocess wet cleaning system as a replacement for part of the capacity of the existing perc dry-cleaning machine.
- (3) The facility is registered with the EPA under the Clean Air Act Title III National Emissions Standards for Hazardous Air Pollutants.

5. <u>Summation</u>

- a. The facility was constructed in accordance with all regulatory deadlines.
- b. The facility is eligible for final tax credit certification in that it meets the definition of a pollution prevention facility for this pilot program.
- c. The applicant indicated that the tax credit program was not a determining factor in installing this equipment.

6. Director's Recommendation

Based upon these findings, it is recommended that a Pollution Prevention Facility Certificate bearing the cost of \$ 21,605 be issued for the facility claimed in Tax Credit Application No. T-4762.

DPK 05/01/97 9:36 AM

Attachment B

DEPARTMENT OF ENVIRONMENTAL QUALITY UST POLLUTION CONTROL TAX CREDIT PROGRAM

REQUEST FOR TRANSFER OF TAX CREDIT

 Please provide information asked for below and attach a copy of your tax credit certificate.

 Tax Credit Certificate No.
 2268
 Tax Credit Application No.
 7-2762

 Name and address of current tax credit holder:
 Name
 Richmonds Service

 Address
 511
 Deschutes Ave

 Maupin
 0R
 97037

 Name and address to transfer tax credit to:
 10

Name

Address

KODNEY A. WOODSIDE DBA KICHMONDS SERVICE Po Box 366 + 511 Deschutes a Nauph DR 97037

Signature of current tax credit holder

Date of signature 3-27-9

PHONE NO. OF PERSON DEQ MAY CONTACT REGARDING THIS REQUEST: (341) 395-2638

Send this request to:

Attn: Barbara Anderson DEQ 811 SW 6th Portland, OR 97204

Phone: (503) 229-5870 or toll-free in Oregon 1-800 452-4011. FAX: (503) 229-6954.

State of Oregon	
-----------------	--

Certificate NO.

Date of Issue Application No. 2268

9/21

21/90 2762

DEPARIMENT OF ENVIRONMENTAL QUALITY

POLIUTION CONTROL FACILITY CERTIFICATE

and the second	· · · · · · · · · · · · · · · · · · ·
Issued to:	Location of Pollution Control Facility:
Richmond's Service	511 Deschutes Avenue Maupin, OR 97037
511 Deschutes Avenue Maupin, OR 97037	
As: () Lessee (X) Owner	
AS. () LESSEE (A) OWIEL	
Description of Pollution Control Facility:	
(110-112 toning fibermines mining mill	ant-import having trails woniton
SIL-P3 tanks, fiberglass piping, spill	containment dasins, tank monitor
Type of Pollution Control Facility: () Air () Noise (X) Water () Soli	id Waste () Hazardous Waste () Used Oil
Date Facility was completed: 4/20/89	Placed into Operation: 4/20/89
Actual Cost of Pollution Control Facility:	\$19,406.00
Percent of actual cost properly allocable t	to pollution control: 88 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 CRS 316.097 or 317.072.

Sianed

Title William P. Hutchison, Jr., Chairman

Approved by the Environmental Quality Commission on the twenty-first day of September, 1990.

EQC.10A (5/90)

Attachment C Program Summary

		6/5/97 I	Reco	mmendatior	1	Cumulative - 1997								
Certificates	Facility Cost		C	ert.Value	No. Apps	Fa	acility Cost	Cert.Value		No. Apps				
Pollution Prevention	\$	94,503	\$	47,252	2	\$	218,346	\$	171,095	5				
Pollution Control	\$	-	\$	_	0	\$		\$	-	0				
Air Quality	\$	902,707	\$	451,354	6	\$	902,707	\$	451,354	6				
CFC	\$	-	\$	-	0	\$	-	\$	-	0				
Field Burning	\$	-	\$	-	0	\$	187,548	\$	122,032	3				
Noise	\$	-	\$	-	0	\$	-	\$	-	0				
Hazardous Waste	\$	-	\$	-	0	\$	-	\$	-	0				
SW - Recycling	\$	400,711	\$	200,358	13	\$	400,711	\$	200,358	13				
SW - Landfill	\$	-	\$	-	0	\$	-	\$	-	0				
Water Quality	\$	15,582	\$	7,791	1	\$	15,582	\$	7,791	1				
UST	\$	333,796	\$	153,312	3	\$	333,796	\$	153,312	3				
Total	\$	1,652,796	\$	812,815	23	\$	1,840,344	\$	934,847	26				
Reclaimed Plastics	\$	122,644	\$	61,323	4	\$	122,644	\$	61,323	4				
TOTALS	\$	1,869,943	\$	921,390	29	\$	2,181,334	\$	1,167,265	35				

1997 Tax Credit Program Overview

Facility Cost represents the facility cost certified or to be certified by the EQC.

Allocable Cost represents the certified facility cost multiplied by percentage allocable to pollution control.

The actual dollars that can be applied as credit are 50 percent of the certified allocable cost.

	App. No	1	1997	1998	1999		2000	2001	2002	2003		2004	2005	 2006	,
Prior to 1997		\$18,	,189,000	\$ 15,848,000	\$ 515,347,000	\$`	14,898,000	\$ 12,739,000	\$11,133,000	\$7,750,000		\$5,750,000	\$738,000		
2/97 EQC			\$16,889	\$16,889	\$16,889		\$16,889	\$16,889	\$4,505	\$4,505					
4/97 EQC		\$	3,483	\$3,483	\$3,483		\$3,483	\$3,483	\$3,483	\$3,483	\$ -	2,916	\$ 2,916	\$ 2,916	
6/97 EQC	;	\$	137,616	\$ 137,616	\$ 137,616	\$	136,517	\$ 136,517	\$ 51,949	\$ 51,949	\$	48,930	\$ 48,930	\$ 48,930	
Total 1997	-	\$	157,988	\$ 157,988	\$ 157,988	\$	156,889	\$ 156,889	\$ 59,937	\$ 59,937	\$	51,846	\$ 51,846	\$ 51,846	•
Tota	<u>ا</u> ر .	\$18,	,346,988	\$ 16,005,988	\$ 15,504,988	\$	15,054,889	\$ 12,895,889	 \$11,192,937	\$7,809,937		\$5,801,846	 \$789,846	\$51,846	:

Maximum Tax Relief That May Be Taken In Future Tax Years

Page 2

State of Grepph
 Department of Environmental Quality

STATE OF OREGON BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

IN THE MATTER OF:

OFFICE OF THE DIRECTOR

9 1997

JUN

U.S. ARMY UMATILLA CHEMICAL DEPOT

PERMIT FOR THE TREATMENT AND STORAGE OF HAZARDOUS WASTE;

EPA I.D. # OR6 213 820 917

AND

AIR CONTAMINANT DISCHARGE PERMIT

PERMIT # 25-0024

PETITIONERS' RESPONSE TO THE MAY 28, 1997 MEMORANDUM SUBMITTED BY THE DEQ

I. INTRODUCTION

On April 14, 1997 the Sierra Club, GASP, and the Oregon Wildlife Federation (Petitioners) requested that the Oregon Environmental Quality Commission (EQC or Commission) reconsider and revoke, rescind, or modify its decisions to approve 1) the Umatilla Chemical Depot Facility's (UCDF) permit for the storage and treatment of hazardous wastes, 2) UCDF's air contaminant discharge permit, 3) the human health and ecological risk assessments performed to evaluate the risks posed by the proposed incinerator, and 4) the evaluation of the best available technology (BAT) for the chemical warfare agent stockpile stored at UCDF. Petitioners further requested a public hearing before the EQC wherein the issues raised in the petition could be addressed and full public participation in the Commissions' deliberations could be permitted.

On May 28, 1997, the Oregon Department of Environmental Quality (DEQ) submitted a memorandum to the EQC attempting to rebut the issues raised in the Petition for Reconsideration that will be considered by the EQC on June 5, 1997. For the reasons outlined below, the DEQ's attempted defense of the permits must be rejected.

11. AT PRESENT, THE EVIDENCE ESTABLISHES THAT THE ARMY HAS NO INTENTION OF OFFERING A CARBON FILTER SYSTEM AS PART OF UMCDF'S POLLUTION ABATEMENT SYSTEM, NOR CAN DEQ ENSURE THAT THE ARMY CAN PROVIDE A BRINE REDUCTION AREA (BRA) OR DUNNAGE INCINERATOR THAT WILL OPERATE WITHIN REGULATORY STANDARDS

The DEQ's memo summarily dismisses the issues raised by Petitioners concerning critical systems proposed for the UCDF incinerator. These systems are the (1) purported carbon filter system, (2) the brine reduction area (BRA), and (3) the dunnage incinerator (DUN).

DEQ dismisses concerns about these systems by stating that the public record "contains a description of the permittee's agreement to install the carbon filters at UMCDF", and that the record "contains a discussion of the use of the dunnage incinerator and the brine reduction units." Memo at 2. These statements do not address Petitioners' concerns.

First, with respect to the carbon filter system, DEQ fails to discuss the DOD Interim Status Assessments cited by Petitioners describing, for example, that the Army "has decided to postpone the demonstration test and future site PFS [PAS filter system] construction and instead further evaluate the PFS." <u>See</u>, Petition for Reconsideration (Petition) at 7 - 9. Whatever the permittee's

"agreement" may be regarding the installation of carbon filters, the DEQ cannot rebut the fact that carbon filters have not been tested or used at JACADS or TOCDF. Consequently, without the required verification testing, or prove-out, carbon filters <u>cannot</u> be used at UMCDF. <u>See</u>, 50 U.S.C. § 1521(k).

Petitioners believe that what DEQ intends to do is allow the Army to remove the carbon filter system from the current permit requirements through a permit modification. This permit modification will be "justified" by Army data claiming that a carbon filter system is not needed. However, any such data that may be offered by the Army concerning the emission of chemical warfare agents, dioxin, dioxin-like compounds, and other hazardous wastes from JACADS or TOCDF is severely suspect. At a minimum, Army data in this area is flawed because of the significant problems encountered in accurately capturing (from stack gases and particulate) and recovering (analyzing in a lab) chemical warfare agents, dioxin, dioxin-like compounds, and other hazardous wastes. The fact is that tests to detect and quantify these dangerous chemicals can be expected to significantly under-report the quantities being emitted from the stack.

In sum, the record to date clearly reflects that the Army will not employ a carbon filter system at UMCDF. Even if the Army intended to use carbon filters at UMCDF, the DEQ and EQC must find that as a matter of law that carbon filters cannot be used because they have not been properly tested. <u>See</u>, 50 U.S.C. § 1521(k). Therefore, the DEQ and EQC should require the Army to revise and

resubmit its application for all relevant permits and correctly state that carbon filters will not be used.

Second, there is no evidence to date that the Army has been able to successfully bring a BRA on line at JACADS or TOCDF. In response to this concern DEQ stated that the "Record contains a discussion of the use of the ... brine reduction units." Memo at 2. So what? Doesn't the DEQ or EQC care at all that a significant part of the waste handling/treatment system has not been proven to work at the Army's two other operating facilities? Petitioners repeat their request that the Army be required to resubmit its application for all relevant permits omitting the BRA and explaining how wastes that were to be handled in that area will be treated.

Finally, regarding Petitioners' concerns about the dunnage incinerator, the DEQ responds by stating that the "Record contains a discussion of the use of the ... dunnage incinerator ..." Memo at 2. Like the BRA, the DUN has <u>not</u> been successfully operated at JACADS or TOCDF. Petitioners repeat their request that the Army be required to resubmit its application for all relevant permits omitting the DUN and explaining how wastes that were to be handled by that incinerator will be treated.

III. THE DEQ FAILED TO REBUT THE ISSUES RAISED BY PETITIONERS REGARDING THE INADEQUACY OF THE HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS

DEQ attempts to dismiss Petitioners' concerns about flaws in the human health and ecological risk assessments, as well as Petitioners' concern that allowing construction of the multimillion dollar UMCDF prior to completing detailed risk analyses will create a significant bias prejudicing the DEQ's or EQC's assessment of Pettioners' human health and ecological risk concerns.¹ The weight of such prejudice may violate the rights of Petitioners' to due process as guaranteed by the Constitution.

DEQ refuses to address these detailed concerns. Instead, DEQ relies on its statements at a July 11, 1996 hearing to support its position. However, even if some of the issues raised by Petitioners were discussed at the July 11, 1996 hearing, critical issues that were not addressed at that hearing have been ignored by DEQ.

For example, Petitioners raised concerns about the Risk Assessment Addendum provided by Ecology & Environment, Inc. dated November 19, 1996. Regarding the important issue of non-cancer health impacts from expected emissions of dioxin and dioxin-like chemicals the Petitioner's stated:

Perhaps the most troubling aspect of the HHRA relied upon by the Commission is its refusal to consider the noncancer health effects from expected exposures to PCBs, dioxin, dioxin-like chemicals, and the sulfur analogs of dioxins and furans. The risk assessment contractor attempted to justify the failure to recognize non-cancer health impacts from dioxin and related chemicals in the following passage.

EPA does not endorse using RfDs [reference doses] to assess the noncancer effects posed by dioxin. Rather, the margin or exposure approach has been recommended ... If the facility-specific exposures are a small fraction (i.e., 1% to 3%) of the background exposures, [level of contamination that already exists] then the facility is assumed

See, Petition at 17 - 24.

to pose negligible noncancer risks ... Rough calculations for this scenario were performed for the subsistence farmer scenario located at the fence line at UMCDF. This scenario resulted in a dose of .03 picogram per kilogram per day (pg/km/day), which is within the 1% to 3% range. Therefore ... noncancer effects from potential dioxin emissions do not exceed EPA's benchmark.

Risk Assessment Addendum at 5. This explanation, which was not specifically adopted by the Commission, must be rejected as completely contrary to public health protection principles and inconsistent with Oregon's BAT requirement.

What the quoted passage attempts to avoid is the stark reality that residents of Oregon, and most of the rest of the United States, already have too much dioxin in their bodies. EPA's 1994 Dioxin Health Assessment Study concludes that an appropriate RfD for non-cancer effects from dioxin exposure would be 10 to 100 times less than the current national exposure levels for dioxin (1 to 3 pg/km/day). This analysis was confirmed by the Army's risk assessment expert, Dr. Finely. BRD. TR. at 877 -878. Relying, for the moment on EPA's assessment, this would place the dioxin RfD in the range between .01 and .03 pg/km/day. BRD. TR. at 878.

The "rough" calculation for the subsistence farmer provided in the addendum to the risk assessment reached .03 pg/km/day, the upper end of the RfD. If proper adjustments were made to consider a breast-feeding infant or developing fetus, the .03 RfD would be easily exceeded. Therefore, the Commission has failed to adequately protect these sensitive sub-populations. <u>See</u>, 42 U.S.C. § 6925(c); <u>Ecolotec</u>. [footnotes omitted]

Petition at 21 - 23. Obviously, DEQ's July 11, 1996 statement could not have addressed the issues raised by Petitioners concerning the Risk Assessment Addendum completed four months later.

DEQ also chose to wholly ignore all of Petitioners other concerns regarding risk analyses, including: (1) impacts of low level chemical warfare agent exposures considering Gulf War

illness; (2) synergistic impacts including disruption of the endocrine system; (3) failure of the Army's lessons learned program; and (4) the gross inadequacy of the Army's chemical warfare agent monitors (i.e., ACAMS).

DEQ attempts to assuage concerns about the contents of the Army's chemical agent munitions by stating that the permit requires a waste analysis, including an analysis of agent purity. Memo at 2 - 3. This statement ignores DEQ's own regulations requiring that accurate waste composition estimates be stated in the application for a permit. OAR §§ 466.045(c)(2), 466.120(2). In addition, EPA standards stated in 40 C.F.R. § 270.14(b)(2) specifically require that the contents of the permit application include:

Chemical and physical analyses of the hazardous waste and hazardous debris to be handled at the facility. At a minimum, these analyses shall contain all the information which must be known to treat, store, or dispose of the wastes properly in accordance with Part 264 of this chapter.

The information in the record thus far does not indicate that proper "chemical and physical analyses of the hazardous waste" at UMCDF have been provided by the Army. This important component of the hazardous waste permit application should be accurately and fully supplemented, and changes to the risk analyses where appropriate should be performed.

The summary treatment of Petitioners' significant risk assessment concerns in DEQ's memo to the EQC demonstrates that DEQ is more interested in meeting the Army's demands to get the project going than it is in ensuring the protection of public health and the environment. The EQC must not further erode public confidence

in the permitting process by blindly accepting DEQ's unsupported assertions.

IV. THE SOLVATED ELECTRON CHEMISTRY TECHNOLOGY WAS NOT FULLY CONSIDERED BY DEQ

DEQ claims that it reviewed solvated electron chemistry (known as SET) in its Best Available Technology (BAT) analysis. Memo at 3. DEQ states that SET was "not mature enough at the time to provide sufficient information." Memo at 3.

It appears that the circumstances regarding SET have changed since DEQ performed its analysis. The developers of SET claim that the technology is capable of destroying M-55 rockets containing GB, and that it has been successfully tested on all chemical weapons agents and explosives. DEQ should be required to perform a more current review of the technology before finalizing plans to use an incineration technology that will expose residents to thousands of doses of chemical warfare agents, dioxin, dioxin-like chemicals and other hazardous wastes.

V. DEQ'S COMPLIANCE HISTORY ANALYSIS FALLS FAR SHORT OF REGULATORY STANDARDS

DEQ attempts to get by with the minimum required by claiming that it reviewed information concerning TOCDF and various worker disclosures. Memo at 3. However, DEQ fails to even suggest that with respect to TOCDF it considered allegations of interference with a witness during the Steve Jones RCRA whistleblower hearing (see, 42 U.S.C. § 6971) against Army official Dave Jackson, and the

refusal of TOCDF Army officials to provide testimony during the Jones hearing. These are serious derelictions of responsibility under RCRA. The whistleblower provisions were designed to ensure that regulators (like DEQ) and the public would get full access to information about how a hazardous waste facility is operating. At TOCDF, in the Jones case, the Army simply refused to participate in the whistleblower hearing process. This demonstrates that the Army has little respect for RCRA requirements.

Moreover, Petitioners stated that DEQ's analysis of the Army's compliance history was insufficient in scope. Petitioners' noted that "the regulatory requirement makes clear that the examination of compliance history must include 'other similar facilities.' OAR 340-120-010(2)(h). This means that the Army's compliance history at CAMDS and Rocky Flats are also relevant ... 'similar facilities' includes other hazardous waste incinerators and/or facilities that treat, store or dispose of chemical weapons." Petition at 25. DEQ did not address this issue in its memo.

Likewise, there is no evidence that DEQ considered the 1990 environmental crimes convictions of Army personnel at Aberdeen Proving Ground. <u>United States v. Dee</u>, 912 F.2d 741 (4th Cir. 1990). Did DEQ even search for such information? Did DEQ obtain GAO reports, EPA reports, Army or Pentagon Inspector General reports, and/or reports from other state agencies regarding the Army's compliance history at chemical weapons sites and other hazardous waste facilities? DEQ's rather sparse review of the Army's compliance history strongly suggests that there is little

interest in how the Army and its chosen contractor(s) will perform. This further undermines public confidence in the Agency's ability to protect public health and the environment. The members of the public who will be directly impacted by the construction and operation of UMCDF, a facility that will handle deadly chemical warfare agents, need aggressive watchdogs overseeing every aspect of the process. Perhaps the EQC can emphasize the importance of aggressive oversight by sending the permit back to DEQ for the additional work it sorely needs.

VI. DEQ FAILS TO DEMONSTRATE ANY CONCERN ABOUT THE EMISSION OF CHEMICAL WARFARE AGENTS INTO OREGON WATERS

hyper-technical argument when makes a it rejects DEQ Petitioners' concerns about chemical warfare agents reaching nearby waterways by stating that "the United States Court of Appeals (Tenth Circuit) rejected the applicability of the Clean Water Act to stack emissions at Tooele." Memo at 3. While this statement is correct, it ignores the most important reason why Petitioners raised the issue: chemical warfare agents and their byproducts will be deposited into local waters like the Columbia and Umatilla Rivers. The DEQ expresses no concern about the impact that the emission (through air transport and deposition) of chemical warfare agents, dioxin, PCBs, dioxin-like chemicals, and other hazardous wastes will have on local waters. The EQC must send the permit back to DEQ for a full evaluation of the impacts of air deposition of hazardous chemicals from UMCDF into Oregon waters.

VII. DEQ FAILED TO ACKNOWLEDGE THAT UMCDF WILL CREATE AIR POLLUTION IN VIOLATION OF OREGON AIR QUALITY LAWS

Petitioners have stated that "the expected emissions of dioxin, dioxin-like chemicals, PCBs, sulfur analogs of dioxin, and chemical warfare agents will be in quantities that will cause air pollution. See, ORS § 468A.005(5). Air pollution from any new air source is prohibited by State law. ORS §§ 468A.010(a); 468A.015. Given this restriction the Commission should reconsider all available alternatives." Petition at 26. DEQ responded by stating "that the UMCDF will meet all applicable air emission standards." Memo at 3 - 4.

DEQ is wrong. For example, given the high "background" levels of dioxin and the non-cancer health impacts caused by dioxin, there can be little doubt that dioxin will be emitted "in sufficient quantities ... as are or are likely to be injurious to public welfare." ORS § 468A.005(5). Other chemicals that have not been thoroughly considered may pose similar problems.

VIII. CONCLUSION

DEQ's response to the Petition for Reconsideration re-enforces Petitioners' concerns. The EQC should grant the Petition and provide all the relief Petitioners have requested and/or such other relief as may be equitable and just.

Respectfully submitted,

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Counsel for Petitioners

CERTIFICATE OF SERVICE

I certify that the foregoing Petition for Reconsideration was served via First Class Mail, postage pre-paid on June 4, 1997 to the party(ies) listed below.

U.S. Army Legal Department Umatilla Chemical Depot Hermiston, Oregon 97838-9544

Langdon Marsh Director Oregon DEQ 811 SW Sixth Ave. Portland, OR 97204-1390

RICHARD E. CONDIT

CERTIFICATE OF SERVICE

I certify that the foregoing Petition for Reconsideration was served via First Class Mail, postage pre-paid on June 5, 1997 to the party(ies) listed below.

U.S. Army Legal Department Umatilla Chemical Depot Hermiston, Oregon 97838-9544

Langdon Marsh Director Oregon DEQ 811 SW Sixth Ave. Portland, OR 97204-1390

RICHARD E. CONDIT

To: Environmental Quality Commission

From: Mary O'Brien

Date: 5 June 1997

RE: Dioxin production by chemical weapons incineration: A response to the most recent document of Kristiina Iisa.

Earlier documents:

#1 October 29, 1996:

Kristiina Iisa answers DEQ questions on dioxin formation in the proposed Umatilla incineration of nerve gas weapons

#2 13 May 1997:

Pat Costner answers DEQ questions on dioxin formation in the proposed Umatilla incineration of nerve gas weapons

#3

1.

2 June 1997:

Kristiina Iisa response to Pat Costner's 13 May 1997 document

RESPONSE TO KRISTIINA IISA'S 2 JUNE 1997 DOCUMENT

lisa neither responds to nor refutes ANY of the eight lab and pilot scale studies or the six full-scale incinerator studies Costner cites (Document #2, p. 5) showing increased chlorine in incinerator feedstocks leading to higher dioxin output. Instead, Iisa cites only "Rigo et al., 1995" and "Wilson, et al. 1995" to say that some studies have not shown increased dioxin output.

"Rigo, et al. 1995" is a study that was developed at the behest of the PVC industry's Vinyl Institute in order to defend PVC (polyvinyl chloride), because the EPA was showing that incineration of PVC is one of the major sources of dioxin in U.S. air. [See Attachment A.] Iisa does not refute Costner's note that the chlorine content of pure HD is essentially identical to that of PVC plastic products (Document #2, p. 2)

In her 69-page 1997 report, *The Burning Question: Chlorine and Dioxin* (1997; Greenpeace), Costner disassembles the Rigo report, analyzes the raw data, and shows that Rigo, et al. tested an hypothesis of limited value by a statistical method of questionable suitability using measures that not only are inapperpriate but also have levels of uncertainty so great as to render them unsuitable for rigorous statistical analysis.

Morever, Costner shows that the conclusions presented by Rigo et al. are contradicted by their own statistical findings. That is, the statistical values calculated by Rigo, et al. show that chlorine input and dioxin emissions correlated positively at the majority of the combustors in their study.

"Wilson, et al. 1995" is by three Dow Chemical Company employees. They use the same data as that used by Rigo et al. and follow the same general procedures. They compare percent chlorine in feed and dioxin concentrations in stack gases from hazardous waste incinerators. Such a comparison is valid only when both waste feedrates and stack gas flowrates are held constant, which is not the case for the incinerators in their study. Nonetheless, the data in their paper suggest a positive correlation between percent chlorine in feed and dioxin emissions.

To state, as she does, that the S/Cl molar ratios that would be encountered when incinerating HD at the Umatilla Army Depot, would reduce dioxin, is not accurate and is contradicted by the Raghunathan and Gullett paper she cites.

Itisa neither mentions nor refutes the evidence Costner has offered that sulfur analogues of dioxins (i.e., PCDTs and PCTAs) will be produced when incinerating HD, and that these are toxicologically similar to chlorinated dioxins (Document #2, p. 2).

2.

3.

5.

Itisa inextricably claims that the increase in dioxin that has been documented when incinerating sulfur-containing coal (at S/Cl ratios of 0.40 to 0.71; see Document #2, p. 2) does not apply to sulfur-containing agent. She instead says dioxin is not increased when sulfur dioxide is added when the fuel is natural gas. This is a nonsequitur.

Iisa cites the Ogawa, et al. (1995) paper regarding reductions of dioxin production at S/Cl molar ratios of 0.096 to 0.65 when burning sulfur-containing coal, sawdust, and PVC; but fails to note that the Raghunathan and Gullette (1996) paper (which Iisa sometimes refers to as "Gullett and Raghunathan, 1996") found <u>increases</u> of dioxin yield at S/Cl molar ratios of 0.38 to 1.15 when burning sulfurcontaining coal in the presence of chlorine.

(As a side note, Iisa is wrong in her statement that molar ratios are not calculated on the basis of molecular weights. Iisa is confusing molar ratios with molecular ratios. Her claim that the S/Cl molar ratio for HD is 0.69 has no reference, or explanation. See Document #3, at 1.3).

4. Iisa's repeat of Table 1 re: dioxin output at the Johnston Atoll incinerator (i.e., JACADS, not JADACS) ignores the high variability in output of dioxin (see Document #3, at 2.3) In fact, there were other chlorine sources in these JACADS incinerators (e.g., hypochlorite in some incineration runs, not in others), and Iisa appears to not be aware of this (see Document #2, p. 3). Iisa neither mentions nor refutes the documentation by Costner that scientists have noted the large errors in stack measurements of dioxins (Document #2, pp. 7-9); and the lack of validated analysis at JACADS (Document #2, pp. 20-21).

In the absence of a refutation of this evidence, Iisa is merely citing numbers without paying attention to their cause, reliability, or validity.

Iisa correctly notes that the use of fixed bed carbon filters would theoretically reduce emissions of dioxin. However, no such incinerators operate in the U.S.; at the Tooele facility the Army first agreed to use carbon filters and then got the state to allow them to take them off. The one paper Iisa cites, by Steinhaus and Dirks, describes the use of fixed bed carbon filters at a German research facility

on combustors that are essentially pilot-scale, i.e., 30-50 kg/hr throughput rates. She offers no evidence that such devices are or have been successfuly used on any full-scale combustors, such as those proposed for Umatilla Army Depot. The Steinhaus and Dirks paper does not indicate the method used to measure dioxin output.

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In addition, Steinhaus and Dirks note that the drawbacks of the filter are "risk of spontaneous ignition of the coal" and "risk of dust explosion." When such a risk is detected at this research facility, "the flue gas is led through a bypass." Bypassing a carbon filter is <u>not</u> acceptable for an incinerator that is burning nerve gas and producing dioxin.

It would seem that the state of Oregon would want to ask why there are no commercial or Army incinerators using carbon bed filters in the U.S.

JACADS experienced explosions, including one that blew a hole in the wall of an incinerator. What would this do to a packed bed filter?

When the Army incinerates these dioxin-laden filters (as it has proposed to do in Oregon), more dioxin will be produced.

The question of disposal of dioxin-contaminated waste is highly problematic. For every pound of nerve agent incinerated at JACADS, approximately 9-10 pounds of dioxin-contaminated wastes had to be disposed of at a hazardous waste site. This does not include dunnage or ton containers that were contaminated with dioxin-laden ash.

GENERATION OF INCINERATOR WASTES AT JACADS

Agent	Quantity of Agent Burned, Ibs	Quantity of Waste Generated, lbs.	Ratio of Agent to Waste				
	134,961						
VX	148,000	1.2 million	~ 1:10				
HD	140,000	1.3 million	~1:9				

References for table:

Macrae, SR, HM Carlson, MA Hermes, F Klingener, RS Wassman. "Evaluation of the HD Ton Container Test: Johnston Atoll Chemical Agent Disposal System Operational Verificatin Testing." MTR 93WOOOOOO2; MITRE, McLean, Virginia, April 1993.

Macrae, SR, JF Klingener, and RS Wassmann. "Evaluation of the HD Projectile Test. Johnston Atoll Chemical Agent Disposal System Operational Verification Testing." MTR 93W0000060, MITRE, McLean, Virginia, May 1993.

Macrae, SR, HM Carlson, MA Hermes, L Scherer, DJ Tripler, RS Wassman. "Evaluation of the VX Rocket Test: Johnston Atoll Chemical Agent Disposal System Operational Verification Testing," MITRE, McLean, Virginia, November 1992.

I apologize for the lack of a formal, documented response to Iisa's document, but Costner and I had part of one day in which to review Iisa's 2 June document.

I urge EQC to take seriously the evidence that Costner has presented, because it indicates that:

- 1. Sulfur in HD will increase the production of dioxin and will produce dioxin-like sulfur analogues of dioxin.
- 2. The State of Oregon will not be able to measure either dioxins or nerve agent that are released through the stacks.

3. HD has a chlorine content similar to PVC, the incineration of which is noted to be one of the major sources of dioxin emissions into the U.S. environment.

Incineration of nerve gas weapons will produce massive amounts of dioxincontaminated waste, to be landfilled.

4.

The DEQ and the EQC should commission a peer review of Kristiina Iisa's repeat of the PVC industry's claims. It is irresponsible to move forward without a serious examination of the evidence that Iisa's information is not accurate.

The consequences of the State of Oregon failing to examine the evidence Costner presents constitute a potentially grave threat to the citizens and wildlife of Oregon.

THE BURNING QUESTION

Chlorine Dioxin

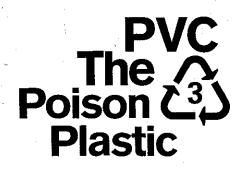
A GREENPEACE REPORT WRITTEN BY PAT COSTNER

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Foreword

In 1995, a new scientific study emerged in policy debates around the world concerning dioxin prevention strategies. The conclusions of the study, by H. G. Rigo et al. entitled "The Relationship Between Chlorine in Waste Streams and Dioxin Emissions From Waste Combustor Stacks," published by the American Society of Mechanical Engineers (ASME), are used to support the contention that there is no link between PVC or chlorine waste inputs to incinerators and the amount of dioxin output. This study is frequently cited by the chlorine industry as an authoritative rebuttal to cleaner material substitution policies.

Greenpeace decided to ask our Science Unit to review the ASME study for two reasons:

- 1) the conclusions point in a different direction than most other published technical literature on the topic; and
- 2) Primary funding (\$150,000 US) for the study was provided by the Vinyl Institute (VI), a trade association representing corporations that manufacture polyvinyl chloride plastic (PVC) and its chemical feedstocks.

Our review shows that a surprisingly higher degree of correlation exists between chlorine input and dioxin stack emissions than is concluded by the ASME report. Over and above these discrepancies, the data and methodologies are inappropriate and/or unreliable for assessing the relationship between chlorine inputs and dioxin outputs from incinerators.

Independent Investigation Needed

Our review raises serious questions about Rigo et al.'s methodology and the validity of the study's conclusions.

Greenpeace therefore calls upon the American Society of Mechanical Engineers and others to carry out a new review and an independent investigation into the Rigo study and its conclusions. An independent review should evaluate the statistical methodologies used, the appropriateness and reliability of using surrogates for chlorine inputs and dioxin outputs, the reliability of the data used, and limiting the analysis to air emissions of dioxin instead of total dioxin output.

We suggest that the following are some of the questions that should also be asked:

• Was the Rigo et al. study diligently and rigorously peer reviewed by scientists with no financial ties to the Vinyl Institute and its members?

- Is it possible that Rigo's perception of his client's expectations might have inappropriately biased the study's design and/or its reported conclusions?
- Did the American Society of Mechanical Engineers properly oversee the work and guarantee its integrity?
- To what extent has the Rigo et al. study and its conclusions affected policy decisions by government agencies and/or by private sector decision-makers?

How and Why the ASME Study Was Commissioned

The Vinyl Institute needed a report to aggressively defend PVC during dioxin discussions in the USA. On September 6, 1994, one week prior to the scheduled release of the Draft Dioxin Reassessment Report by the United States Environmental Protection Agency (EPA), Robert Burnett, the Executive Director of VI, circulated an internal memorandum on crisis managem to the members of his Executive Board. Attached to the memorandum was a plan entitled: "Crisis Communications Protocol for the Vinyl Institute" that had been prepared by a special VI working group.

Burnett, whose organization represents the American corporations that manufacture and market PVC, was expecting the worst. His group's "Crisis Communications Protocol" starts with a "Situation Analysis" that states:

"EPA will likely conclude that the incineration of chlorinated compounds is the single largest known contributor to dioxin."

The "Situation Analysis" also asserts:

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"Because of the aggressive tactics of Greenpeace and others pointing to PVC as a primary source of dioxin, we believe that PVC will be specifically mentioned [in the EPA report], and potentially slated for further regulation. This belief is supported by recent communications with EPA officials by Bob Burnett on behalf of the Vinyl Institute and members of the Vinyl Institute on behalf of their individual companies."

As it turned out, in this instance, VI's concerns were not fully warranted. It appears Bob Burnett (and his associates, in their "communications with EPA officials" had been more persuasive than they thought. Although EPA's report did contain much evidence that points towards the conclusions Burnett and his organization most feared, the Agency chose not to highlight PVC or other chlorinated compounds as primary sources of dioxin in its 1994 report release.

But VI understood that this issue was not going away. With the immediate crisis in hand, activity shifted to what the memorandum defined as VI's two "long-term goals of crisis communication: *To avoid deselection of PVC by major customers; and to prevent punitive regulation of PVC."*

The means to achieve this, as detailed in the memorandum, includes activities to:

"...aggressively defend the industry's credibility through the use of third party sources to debunk Greenpeace's — or even EPA's — misleading claims."

This is where Rigo enters the picture. VI made a decision whose effect would be to nominate and encourage Rigo to serve in a role that might be described as "VI designated third party." As outlined in the Crisis Communication Protocol, the third party's assigned role is to debunk the conclusion *"that the incineration of chlorinated compounds is the single largest known contributor to dioxin."*

The way this was achieved is described in a memorandum dated August, 22, 1994 from Don Goodman, chairman of VI's Incineration Task Force. Membership in this small working group included representatives of Geon, Dow and Oxychem, three of the largest US producers of PVC and its feedstock chemicals. The Chlorine Chemistry Council of the Chemical Manufacturers Association (CCC) was also represented. The Goodman memo begins:

"The Vinyl Institute has created an Incineration Task Force in anticipation of adverse EPA actions regarding dioxins and furans. After the dioxin reassessment, we believe EPA will focus on dioxins from incineration, particularly the incineration of municipal waste (MSW), hospital waste (MW), and plant industrial waste (HWI & BIF) containing (high) levels of PVC С

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and HCL."

An academic named Dick Magee also served as a member of the Incineration Task Force. Magee was the author of a 1989 study for the Society of Plastics Industry that had found no link between PVC and dioxin emissions from municipal incinerators. Within VI, Magee had earned the title "Lead Contact" for incineration projects according to an August 1993 VI Status Report. He also served as an active member of ASME.

According to Goodman's memo:

"Dick Magee brought forward a proposal from the American Society of Mechanical Engineers (ASME) to hire Rigo & Rigo Associates, Inc. of Cleveland, Ohio. The purpose of ASME as the contractor is to provide unassailable objectivity to the study. The ASME oversight and review committee will bring independent reviewers (including EPA members)" and high level peer reviewed documentation and reports."

The memo goes on to state that the VI Incineration Task Force:

"interviewed Dr. H. Gregory (Greg) Rigo, principal of Rigo & Rigo Associates, Inc. by phone and found him to be extremely knowledgeable ... He is also user friendly (i.e. willing to set his priorities to our needs) and appears to be sympathetic to Plastics, Vinyl, PVC and Cl2."

In discussing the amount of money VI would need to pay Rigo and the ASME to perform the study, Goodman clearly implied in his memo that working group members were already assuming that Rigo's study, when completed, would reach conclusions in support of VI's objectives. The memo proposes a budget item to provide funds that could be used to allow Rigo to advocate on behalf of VI policy using his anticipated report as a basis. At this time, the study that would provide a basis for this report had not yet been designed nor had any work on it begun. As the memo states:

"Since there are many unanswered questions regarding dioxins and since VI may want to use Greg Rigo as an expert witness or advocate to talk about the report, I am proposing an additional \$20,000 as a contingency fund."

One can conclude from the above that there was some expectation that Rigo's study, on behalf of the ASME, would produce conclusions that would be useful to VI.

Often, chemical industry representatives refer to this study as a joint "government/industry" project. This is not altogether untrue.

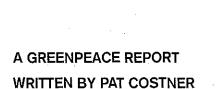
A small portion of funds provided to the study (under \$15,000 US) came from Environment Canada. In addition, some employees of the US EPA provided peer review. One US EPA employee, James Kilgroe, not only provided peer review, but also traveled to Amsterdam, the Netherlands and formally presented the ASME study and its findings to a meeting of the 16th International Symposium on Chlorinated Dioxins, PCBs and Related Compounds.

Did peer reviewers working for the US EPA diligently and rigorously do their work? Was Kilgroe authorized to present the ASME study at the Amsterdam scientific conference? In doing so, did Kilgroe convey to others present that the US EPA endorses the ASME study and its conclusions?

We would also like to know whether Environment Canada considers itself to be a sponsor of this study. (In our phone interviews, it seemed to downplay its involvement.) And if they do consider themselves a sponsor, did Environment Canada perform its own independent assessment of the validity of the study's methodology and the reliability of its reported conclusions?

THE BURNING QUESTION

Chlorine J Dioxin



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Foreword

In 1995, a new scientific study emerged in policy debates around the world concerning dioxin prevention strategies. The conclusions of the study, by H. G. Rigo et al. entitled "The Relationship Between Chlorine in Waste Streams and Dioxin Emissions From Waste Combustor Stacks," published by the American Society of Mechanical Engineers (ASME), are used to support the contention that there is no link between PVC or chlorine waste inputs to incinerators and the amount of dioxin output. This study is frequently cited by the chlorine industry as an authoritative rebuttal to cleaner material substitution policies.

Greenpeace decided to ask our Science Unit to review the ASME study for two reasons:

- the conclusions point in a different direction than most other published technical literature on the topic; and
- 2) Primary funding (\$150,000 US) for the study was provided by the Vinyl Institute (VI), a trade association representing corporations that manufacture polyvinyl chloride plastic (PVC) and its chemical feedstocks.

Our review shows that a surprisingly higher degree of correlation exists between chlorine input and dioxin stack emissions than is concluded by the ASME report. Over and above these discrepancies, the data and methodologies are inappropriate and/or unreliable for assessing the relationship between chlorine inputs and dioxin outputs from incinerators.

Independent Investigation Needed

Our review raises serious questions about Rigo et al.'s methodology and the validity of the study's conclusions.

Greenpeace therefore calls upon the American Society of Mechanical Engineers and others to carry out a new review and an independent investigation into the Rigo study and its conclusions. An independent review should evaluate the statistical methodologies used, the appropriateness and reliability of using surrogates for chlorine inputs and dioxin outputs, the reliability of the data used, and limiting the analysis to air emissions of dioxin instead of total dioxin output.

We suggest that the following are some of the questions that should also be asked:

- Was the Rigo et al. study diligently and rigorously peer reviewed by scientists with no financial ties to the Vinyl Institute and its members?
- Is it possible that Rigo's perception of his client's expectations might have inappropriately biased the study's design and/or its reported conclusions?
- Did the American Society of Mechanical Engineers properly oversee the work and guarantee its integrity?
- To what extent has the Rigo et al. study and its conclusions affected policy decisions by government agencies and/or by private sector decision-makers?

now and why the ASME Study Was Commissioned

The Vinyl Institute needed a report to aggressively defend PVC during dioxin discussions in the USA. On September 6, 1994, one week prior to the scheduled release of the Draft Dioxin Reassessment Report by the United States Environmental Protection Agency (EPA), Robert Burnett, the Executive Director of VI, circulated an internal memorandum on crisis management to the members of his Executive Board. Attached to the memorandum was a plan entitled: "Crisis Communications Protocol for the Vinyl Institute" that had been prepared by a special VI working group.

Burnett, whose organization represents the American corporations that manufacture and market PVC, was expecting the worst. His group's "Crisis Communications Protocol" starts with a "Situation Analysis" that states:

"EPA will likely conclude that the incineration of chlorinated compounds is the single largest known contributor to dioxin."

The "Situation Analysis" also asserts:

"Because of the aggressive tactics of Greenpeace and others pointing to PVC as a primary source of dioxin, we believe that PVC will be specifically mentioned [in the EPA report], and potentially slated for further regulation. This belief is supported by recent communications with EPA officials by Bob Burnett on behalf of the Vinyl Institute and members of the Vinyl Institute on behalf of their individual companies."

As it turned out, in this instance, VI's concerns were not fully warranted. It appears Bob Burnett and his associates, in their "communications with EPA officials" had been more persuasive than they thought. Although EPA's report did contain much evidence that points towards the conclusions Burnett and his organization most feared, the Agency chose not to highlight PVC or other chlorinated compounds as primary sources of dioxin in its 1994 report release.

But VI understood that this issue was not going away. With the immediate crisis in hand, activity shifted to what the memorandum defined as VI's two "long-term goals of crisis communication: *To avoid deselection of PVC by major customers; and to prevent punitive regulation of PVC."*

The means to achieve this, as detailed in the memorandum, includes activities to:

"...aggressively defend the industry's credibility through the use of third party sources to debunk Greenpeace's — or even EPA's — misleading claims."

This is where Rigo enters the picture. VI made a decision whose effect would be to nominate and encourage Rigo to serve in a role that might be described as "VI designated third party." As outlined in the Crisis Communication Protocol, the third party's assigned role is to debunk the conclusion *"that the incineration of chlorinated compounds is the single largest known contributor to dioxin."*

The way this was achieved is described in a memorandum dated August, 22, 1994 from Don Goodman, chairman of VI's Incineration Task Force. Membership in this small working group included representatives of Geon, Dow and Oxychem, three of the largest US producers of PVC and its feedstock chemicals. The Chlorine Chemistry Council of the Chemical Manufacturers Association (CCC) was also represented. The Goodman memo begins:

"The Vinyl Institute has created an Incineration Task Force in anticipation of adverse EPA actions regarding dioxins and furans. After the dioxin reassessment, we believe EPA will focus on dioxins from incineration, particularly the incineration of municipal waste (MSW), hospital waste (MW), and plant industrial waste (HWI & BIF) containing (high) levels of PVC

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and HCL."

An academic named Dick Magee also served as a member of the Incineration Task Force. Magee was the author of a 1989 study for the Society of Plastics Industry that had found no link between PVC and dioxin emissions from municipal incinerators. Within VI, Magee had earned the title "Lead Contact" for incineration projects according to an August 1993 VI Status Report. He also served as an active member of ASME.

According to Goodman's memo:

"Dick Magee brought forward a proposal from the American Society of Mechanical Engineers (ASME) to hire Rigo & Rigo Associates, Inc. of Cleveland, Ohio. The purpose of ASME as the contractor is to provide unassailable objectivity to the study. The ASME oversight and review committee will bring independent reviewers (including EPA members)" and high level peer reviewed documentation and reports."

The memo goes on to state that the VI Incineration Task Force:

"interviewed Dr. H. Gregory (Greg) Rigo, principal of Rigo & Rigo Associates, Inc. by phone and found him to be extremely knowledgeable ... He is also user friendly (i.e. willing to set his priorities to our needs) and appears to be sympathetic to Plastics, Vinyl, PVC and Cl2."

In discussing the amount of money VI would need to pay Rigo and the ASME to perform the study, Goodman clearly implied in his memo that working group members were already assuming that Rigo's study, when completed, would reach conclusions in support of VI's objectives. The memo proposes a budget item to provide funds that could be used to allow Rigo to advocate on behalf of VI policy using his anticipated report as a basis. At this time, the study that would provide a basis for this report had not yet been designed nor had any work on it begun. As the memo states:

"Since there are many unanswered questions regarding dioxins and since VI may want to use Greg Rigo as an expert witness or advocate to talk about the report, I am proposing an additional \$20,000 as a contingency fund."

One can conclude from the above that there was some expectation that Rigo's study, on behalf of the ASME, would produce conclusions that would be useful to VI.

Often, chemical industry representatives refer to this study as a joint "government/industry" project. This is not altogether untrue.

A small portion of funds provided to the study (under \$15,000 US) came from Environment Canada. In addition, some employees of the US EPA provided peer review. One US EPA employee, James Kilgroe, not only provided peer review, but also traveled to Amsterdam, the Netherlands and formally presented the ASME study and its findings to a meeting of the 16th International Symposium on Chlorinated Dioxins, PCBs and Related Compounds.

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We would also like to know whether Environment Canada considers itself to be a sponsor of this study. (In our phone interviews, it seemed to downplay its involvement.) And if they do consider themselves a sponsor, did Environment Canada perform its own independent assessment of the validity of the study's methodology and the reliability of its reported conclusions?

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Cleaner Materials Policies Challenged

Scientific integrity, however, is not the only question that potentially arises. Rigo et al.'s study and its conclusions have been widely and effectively used to influence public policy decisions by governments in several countries and also purchasing decisions within the private sector.

Chemical industry representatives cite ASME as proof that incineration of chlorinated compounds does not contribute to dioxin generation and release. A fact sheet distributed by the CCC entitled "Waste Combustors and Dioxin" cites Rigo et al. as its authority for the assertion that "...the amount of chlorinated wastes burned in a combustor [incinerator] does not correlate to dioxin emissions from these facilities."

The PVC industry, in particular, has used Rigo et al. to counter arguments put forward by advocates for public health and the environment who propose alternative cleaner materials policies to prevent dioxin generation at its source. Alternative materials policies stem from two circumstances: (1) dioxins are formed when materials containing carbon, hydrogen, oxygen and chlorine are subjected to elevated temperatures, such as those of waste combustors and accidental fires, as well as other reactive conditions; and (2) in most cases, chlorine is the limiting element for dioxin formation, since carbon, hydrogen, and oxygen are typically present in far greater abundance. With an alternative materials policy, the material that provides the chlorine for dioxin formation is replaced by an appropriate, chlorine-free material.

This is a practical way to prevent dioxin generation. As an example, PVC is the single largest use of global elemental chlorine, and its production is expanding. It is also known that dioxin is generated as a byproduct during its production, on a site specific basis, as well as via its use or disposal when burned. These are strong grounds for believing PVC is responsible for a substantial and growing proportion of global dioxin production and emissions. While cleaner substitutes exist for almost all uses of PVC, their adoption is heavily challenged by the chlorine industry.

At present, the most contentious issue around dioxin abatement strategies is on PVC and incineration. Chemical industry representatives strongly dispute the assertion that dioxin is generated by incinerators. As a result of the combustion of PVC plastic, chlorinated solvents and other chlorinated organic materials. To make this case, industry representatives generally cite Rigo et al. because much of the other technical literature on this topic points in the opposite direction.

Case Examples

Once an evaluation of the Rigo et al. study method and conclusions has been completed, it is important to review how this study's conclusions have been used in efforts to influence public policy. We conclude with a number of case examples from several regions of the world.

1) PVC And Hospital Waste in the USA

Kip Howlett, Managing Director of the CCC, sent a letter dated August 29, 1996 to Anthony Robbins, M.D., editor of *Public Health Reports*, the Journal of the US Public Health Service. The letter protests the Journal's publication of an article entitled: "Hospitals and Plastics: Dioxin Prevention and Medical Waste Incineration." Howlett asserts:

"The author incorrectly states that 'latrogenic" dioxin pollution can be largely eliminated by replacing PVC products with alternative materials.' In a government/industry funded peerreviewed study conducted under the auspices of the American Society of Mechanical Engineers, the findings regarding waste streams and incinerators were conclusive: 'The

* from medical sources

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failure to find simultaneous increases in most cases and finding a few inverse relationships, indicates that whatever effect waste feed chlorine has on [dioxin] concentrations in combustor flue gases, it is smaller than the influence of the causative factors."

Robbins also received a second letter of complaint from William Carroll of Occidental Chemical who challenged the competence of the authors and the judgment of the journal's editor. After quoting ASME, Carroll's letter continues:

"Perhaps it would be of greater service to your readers to publish an article on medical waste incineration written by a technical expert in the field."

Later in 1996, the authors of the journal article introduced a resolution at the annual meeting of the American Public Health Association (APHA) restating the article's arguments and its recommendations to hospitals. Despite active lobbying from the CCC and other chemical industry interests against the APHA resolution, it was unanimously adopted. The resolution calls on health care facilities to explore ways to reduce or eliminate their use of PVC and adopt policies to encourage these practices.

2) PVC Packaging in Spain

Issues surrounding municipal incineration have been fiercely debated in Spain for many years. In 1995, in response to concerns about dioxin generation from incinerators, the Spanish government proposed a measure that would achieve a twenty percent reduction in PVC packaging within five years. Intense lobbying and a change in political parties led to the initiative being dropped. However, opposition parties tried to bring PVC reduction back to the political table. During this time the PVC industry initiated and has since intensified its campaign to promote PVC as an environmentally sound material.

Support for PVC is organized in Spain by the largest public relations firm in the world, Burson-Marsteller. Employees of this firm accompany the PVC industry in lobbying and public outreach work. They aggressively target communities who propose PVC reduction policies and particularly target journalists who write critically about PVC products and dioxin. An article opposing PVC or incineration is often followed by a phone call to the journal's owners complaining of bias and distorted facts. In response, APIA, the Spanish association of environmental journalists, awarded Burson-Marsteller its anti-environmental award for 1996.

One pro-PVC leaflet distributed by Burson-Marsteller is entitled "The Reality of PVC versus Greenpeace Accusations." This leaflet cites ASME, 1995 as its reference for the assertion: "...the emissions of dioxins from municipal incinerators is independent of the presence of PVC in the waste."

Another document distributed by Burson-Marsteller is an October, 1996 paper signed by the National Association of Electrochemistry (whose address is the same as that of Solvay, one of Spain's largest chlorine producers). This paper cites ASME to conclude:

"...there is no relation between production of dioxins in municipal waste incinerators and PVC content of waste. A recent study promoted by the American Society of Mechanical Engineers in the USA entitled, 'The Relationship Between Chlorine in Waste Streams and Dioxin Emissions from Waste Combustor Stacks' 6/1/95, confirms the conclusion indicated above. This study is based on the analysis of more than 1,700 samples from 155 incinerators."

In 1997, in a public debate about packaging regulations in Spain, Solvay made a presentation entitled "What are the consequences of the packaging law for the PVC industry?" It concludes:

"...In-depth studies clearly show the fault of pseudo scientific claims of the radical environmental groups. In favour of PVC we can cite the recent study made by Dr. Rappe, the world's most prestigious expert on dioxin, as well as from the American Society of Mechanical Engineers, the Swedish Environmental Agency and the USA EPA. All of them categorically state that there is no relationship between PVC content in wastes and the formation of dioxin in the treatment plants that comply to the European Union Directive on Incineration."

3) Global Negotiations on Persistent Organic Pollutants

As reported in Chemical Week, February 26, 1997:

"The international community aims to establish a legally binding treaty on persistent organic pollutants (POPs) by 2000. Detailed negotiations will begin early next year under the umbrella of the UN Environmental Program (UNEP) and the Intergovernmental Forum on Chemical Safety (IFCS)."

The goal of such an international agreement will be to mandate action by governments to reduce and /or eliminate POPs. These are highly toxic substances that can travel long distances across international boundaries on air and water currents. Action will start with a short list that includes certain chlorinated pesticides such as DDT, chlordane and heptachlor, as well as dioxins and furans.

Chemical Week reports that while the chemical industry is not overly concerned with many of the issues that will be addressed during intergovernmental POPs negotiations,

"...the industry is keeping a close eye on regulation of dioxins and furans, which can be released during production, use and destruction of many chlorinated organic compounds. 'We want to make sure any regulation is based on sound science,' says Kip Howlett, executive director of the Chlorine Chemistry Council."

When Howlett says "sound science," however, what he really means is "Vinyl Institute science."

During 1996, two meetings were held at which the scientific and technical framework for intergovernmental negotiations on POPs were debated and established. One took place in March in Canberra, Australia; the other in June in Manila, the Philippines. At both meetings, chemical industry representatives distributed copies of the Executive Summary of Rigo et al. together with explanatory materials. During the Canberra meeting, for example, VI distributed a press release stating:

"The world's vinyl plastic industry today shared with officials attending a United Nations conference here the results of tests in the United States, Europe, Japan and Australia underscoring the positive environmental performance of the vinyl production process and of vinyl products throughout their life cycle."

Among the findings cited:

"An exhaustive study by the American Society of Mechanical Engineers (ASME International) which analyzed 1,900 results from incinerator stack tests worldwide and concluded that there is no direct relationship between chlorine and dioxin in incineration."

Greenpeace representatives at the meetings argued that an effective global policy pointing toward dioxin elimination must incorporate measures that will encourage substitution of appropriate alternative materials for PVC and for other dioxin precursor materials. In preliminary negotiations, governments decided to consider both approaches for dioxin

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abatement: alternative materials policies and improved pollution control devices. Without a doubt, intense international debate will now take place.

4) PVC Waste Report in Sweden

In 1996 the Swedish government set up a Chemical Committee to review Swedish policies including a review of hazards from the PVC lifecycle. A government commission had declared that PVC had no place in a sustainable society and this led to calls for a phase-out implementation program. The Swedish Environmental Protection Agency was given the task of reviewing PVC waste management and in a 1996 government report entitled "Disposal of PVC Waste" that cites the ASME report, it concludes:

"A reduction in the PVC content of waste will not change the amount of emissions from dioxins in flue gases from waste incineration plants in Sweden."

Using this and other submissions, the Chemical Committee is due to report to the Swedish government by June 1997.

5) PVC Building Materials in Australia

An Australian report entitled "The Environmental Aspects of the Use of PVC in Building Products" was commissioned by the Plastics and Chemicals Industries Association of Australia. It discusses the incineration of PVC waste and concludes:

"In a report published by the American Society of Mechanical Engineers (ASME, 1995) it was concluded from existing data that the dioxin concentrations in flue gas from MSW incinerators could not be correlated with fuel chlorine content. Any effect that chlorine had on the dioxin concentrations from commercial scale systems was masked by the effect of the air pollution control system temperature, ash chemistry, combustion conditions, measurement imprecision, and localized flow stratification."

This has been used by the Australian PVC industry in an effort to weaken the Sydney 2000 Olympic Guidelines which incorporate the concept of ecologically sustainable development, including "minimising and ideally avoiding the use of chlorine based products (organochlorines) such as PCBs, PVC and chlorine bleached paper."

6) The Barcelona Convention for the Mediterranean

In June 1995, the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources, decided to eliminate by 2005 the greatest possible number of substances which are toxic, persistent and liable to bioaccumulate, in particular organohalogens. The following year, a Meeting of Experts was convened in Athens and agreed to binding regional action plans and programs to phase-out toxic, persistent and bioaccumulative inputs with measures and timetables for their implementation.

The protocol was signed by 14 countries bordering the Mediterranean: Albania, Croatia, Cyprus, France, Greece, Israel, Italy, Malta, Monaco, Morocco, Slovenia, Spain, Tunisia and Turkey. Then, in October 1996, at a conference to develop strategies for action, a UNEP background document was presented. It noted:

"Total disagreement to PVC phase-out as a strategy to reduce emissions of dioxins and furans to the environment was expressed by industry participants in the preparatory process towards the present Background Document...The hypothesis that there exists a

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relation between fuel chlorine content and combustor flue gas dioxins concentrations, including all the chlorinated dibenzo(p)dioxins and dibenzofuran isomers was not confirmed by ASME-controlled research and several other studies."

With the ASME report as the defense to take no action, the UNEP meeting resulted in a strangling debate. At issue was a dioxin elimination policy based on incineration design. The final draft document did not set any timelines or strategies towards achieving the decision to eliminate organohalogen inputs into the Mediterranean. The mandate given to this meeting did not result in timelines and specific elimination goals as requested by the prior Meeting of Experts in Athens.

Conclusion

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As we have shown, the ASME report has been widely used to obstruct cleaner materials policies. Given the serious wildlife and human health dangers associated with dioxin exposure, Greenpeace calls upon ASME to carry out a new review and an independent investigation of the report's conclusions. In addition, governments should withdraw any use of the ASME report pending the outcome of the investigation.

Jack Weinberg, Team Leader, Greenpeace International Working Group on Persistent Organic Pollutants (POPs);

Lisa Finaldi, Coordinator, Greenpeace International Toxics Campaign

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Executive Summary

In 1995, the American Society of Mechanical Engineers (ASME) published the report, "The Relationship Between Chlorine in Waste Streams and Dioxin Emissions From Waste Combustor Stacks," which was prepared by H.G. Rigo, A.J. Chandler and W.S. Lanier. Funding was provided by The Vinyl Institute and the Chlorine Chemistry Council, with a minor contribution by Environment Canada.

Scope of the Report by Rigo et al.

The report by Rigo et al. addresses several aspects of the chlorine input/dioxin output issue. However, the quantitative relationship between chlorine input and dioxin output from combustors is the issue of greatest interest from public health and environmental perspectives. For that reason, this review focuses on those segments of the report that pertain to this issue.

The study by Rigo et al. does not evaluate the relationship between chlorine input and total dioxin output from combustors. That is, they do not examine the relationship between the quantity of chlorine fed into a combustor over a specific period of time and the quantity of dioxins that is released in stack gases, fly ash, and other residues during the same period.

Depending on the category of combustor, Rigo et al. compare dioxin concentrations in combustor^a gases to one or more of the following measures:

- Hydrogen chloride (HCl) concentrations in stack gases;
- Percent chlorine in feed; and
- For cement kilns only, chlorine feedrates normalized to daily production rates.

The relationships of these measures to the actual focus of concern - chlorine input and dioxin output - determine in large part the relevance of the report.

Greenpeace reviewed this report and concluded that Rigo et al. used inappropriate and/or unreliable surrogate measures for chlorine inputs and dioxin outputs from combustors. Consequently, the results of their statistical analyses do not provide a valid basis for assessing the relationship between chlorine input and the amount of dioxin generated and released by full-scale waste combustors.

It is not surprising that Rigo et al. conclude that the data examined show little correlation (or even negative correlations). It is surprising, however, that the statistical values calculated by Rigo et al. and presented in the appendices of their report do not appear to be consistent with their conclusions.

^a The title of their report and much of the language in its text suggest that Rigo et al. compared various chlorine-related measures to dioxins in stack emissions. However, when evaluating some combustors, they pooled data describing dioxin concentrations in stack gases with data from other sampling locations in the process train, e.g., boiler outlets, secondary combustion chamber outlets, etc.

Inconsistencies in the Report by Rigo et al.

Municipal Waste Combustors

Rigo et al. conclusion: "On a facility-by-facility basis, 17 [municipal waste combustion] facilities displayed no relationship — two increased and one decreased."

Greenpeace review of statistical analyses by Rigo et al.: At 15 of 22 municipal waste combustion facilities, dioxin concentrations in combustor gases increased at higher concentrations of hydrogen chloride in stack gases (an indicator of chlorine feedrate).^b

The positive correlation coefficients calculated by Rigo et al. for these 15 facilities were statistically significant with greater than 95 percent confidence at five facilities, greater than 90 percent confidence at two facilities and less than 80 percent at the remaining eight.

Among the seven facilities where Rigo et al. found negative correlations, none was statistically significant at the 95 percent confidence level; one reached a confidence level greater than 90 percent; and the remaining six were below 80 percent.

Medical Waste Incinerators

Rigo et al. conclusion: "Of the 17 medical waste incinerators with sufficient simultaneous data to explore the relationship, 14 showed no statistically significant trend, two increased and one decreased."

Greenpeace review of statistical analyses by Rigo et al.: At 10 of 15 medical waste incinerators, dioxin concentrations in combustor gases increased at higher hydrogen chloride concentrations in stack gases.

The positive correlations found by Rigo et al. for the data from these 10 incinerators were statistically significant with greater than 95 percent confidence at two incinerators; greater than 90 percent confidence at one; greater than 80 percent confidence at two; and less than 80 percent at five.

At the seven incinerators where negative correlations were found, statistical significance greater than 95 percent confidence was noted at one incinerator, while confidence levels were less than 80 percent at four. Statistical evaluations of data from the remaining two facilities were invalid: for one unit, hydrogen chloride concentrations were measured following treatment for removal of such acid gases; and, in the other, only two data pairs were presented.

Cement Kilns

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Rigo et al. conclusion: "Cement kiln chlorine feed rate has no discernible influence on the nature or quantity of PCDD/F [dioxins] emitted from the stacks of these facilities."

Greenpeace analysis of data from Rigo et al.: At 14 of 23 cement kilns, higher chlorine feed-rates were accompanied by increased dioxin concentrations in combustor gases.

Rigo et al. presented no statistical values for individual cement kilns in their report. Instead, they based their conclusion on a scatter plot of the aggregated data from the kilns, in which dioxin concentrations are plotted against chlorine feedrates normalized to daily clinker output. No clinker output data are included in their report.

Statistical analyses of chlorine feedrates and dioxin concentrations given for individual kilns in their report show that increasing chlorine feedrates were accompanied by greater dioxin concentrations in gas streams. Positive correlations were statistically significant with greater than 95 percent confidence at three kilns; greater than 80 percent confidence at two

^b Differences between the total number of facilities addressed in the conclusions by Rigo et al. and those cited by Greenpeace are fully explained for this and the other combustor categories in the body of the review.

kilns; and less than 80 percent confidence at nine.

Of the nine kilns where dioxin concentrations decreased at higher chlorine feedrates, no negative correlation was statistically significant at a 95 percent confidence level. At two kilns, negative correlations were statistically significant with greater than 80 percent confidence, while confidence levels were less than 80 percent at the remaining seven.

Hazardous Waste Incinerators

Rigo et al. conclusion: "The available data indicate that, depending on the hazardous waste incinerator, changing chlorine concentration can have no observable effect (20 facilities); increase PCDD/F concentrations (4 facilities); or decrease PCDD/F concentrations (4 facilities)."

Greenpeace analysis of data from Rigo et al.: No conclusions can be drawn from these data about the relationship between chlorine input and dioxin concentrations in stack gases of hazardous waste incinerators.

Rigo et al. did not calculate statistical values for individual hazardous waste incinerators from data describing chlorine input and dioxin output from the stack. They compared percent chlorine in feed and dioxin concentrations in stack gases. This comparison would have been valid if the waste feedrates and stack gas flowrates had been held constant during the trial burns and other tests that were the sources of these data. However, reports describing these efforts show that both waste feedrates and stack gas flowrates were not constant, but fluctuated over substantial ranges.

Boilers and Industrial Furnaces

Rigo et al. conclusions: Two contradictory conclusions were presented: (1) "There is too little hazardous waste fired boiler data to reach firm conclusions," and (2) "Chlorine feed concentration is inversely related to PCDD/F concentrations at the stack for this very limited data set."

Greenpeace analysis of data from Rigo et al.: No conclusions can be drawn from these data about the relationship between chlorine input and dioxin concentrations in stack gases of boilers and industrial furnaces.

Rigo et al. present no statistical analyses for individual boilers and industrial furnaces. Their second conclusion is apparently based on a scatter plot of percent chlorine in feed versus dioxin values from the three combustors for which these data were available. However, a comparison of these two measures is valid only when waste feedrates and stack gas flowrates are held constant, which was not shown to be the case for these combustors. As a result, their first conclusion is the more accurate of the two.

Biomass Combustors

Rigo et al conclusions: Two contradictory conclusions are presented in the report: (1) "Given the variation in PCDD/F concentrations over the range of chlorine feed concentrations and stack HCl concentrations, there is too little data to draw any definitive conclusions," and (2) "There does not appear to be any relationship between chlorine in the waste feed to biomass fired furnaces and PCDD/F concentrations."

Greenpeace analysis of data from Rigo et al.: No conclusions can be drawn from these data about the relationship between chlorine input and dioxin concentrations in stack gases of biomass combustors.

Rigo et al. present no statistical values for individual biomass combustors in their report. Instead, they apparently rely on two scatter plots: (1) an aggregation of dioxin concentrations in combustor gases versus percent chlorine in feed for three combustors, and (2) an aggregation of dioxin concentrations in combustor gases versus hydrogen chloride concentrations in combustor gases from three facilities with five combustors. No

conclusions can be drawn from their first scatter plot, since there are no data describing waste feedrates and stack gas flowrates and no evidence that these variables were held constant. Data from the five combustors in their second aggregate plot were insufficient to allow statistical evaluation: four combustors had only one data pair each, while the remaining combustor had only two data pairs. As a result, no conclusions can be drawn from these data.

Limitations of Design and Execution of Study by Rigo et al.

The following factors must be taken into account in relation to the evaluation by Rigo et al.of the relationship between selected measures used as indicators of chlorine input and dioxin concentrations in combustor gases:

→ The study by Rigo et al. does not answer the question, "Does chlorine input influence dioxin output from combustors?"

Rigo et al. offer no evidence that dioxin concentrations in air emissions correlate with the total dioxin outputs of the full-scale combustors in their study. Indeed, such a correlation would be unexpected: while air pollution control devices capture dioxins from stack gases and deposit them in other combustor residues, some of these devices also enhance the formation of dioxins. As a result, the quantity of dioxins released in stack gases is, as suggested by one study, relatively independent of total dioxin output. In other words, even if statistical analyses of data describing chlorine input and dioxin stack emissions from full-scale combustors are carried out rigorously with appropriate, accurate measures, the results of such analyses cannot be presumed to reflect the relationship between chlorine input and total dioxin output.

→ Rigo et al. compared two measures — those used as indicators of chlorine input and dioxin concentrations in combustor gases — that are either inappropriate for comparison or have margins of error too great to support rigorous statistical evaluation.

Chlorine Input: Of the two indicators of chlorine input used by Rigo et al., one measure – the percent of chlorine in waste feed – is insufficient unless waste feedrates are held constant, which was not shown to be the case for the combustors in this study. The other measure – the concentration of hydrogen chloride in stack gases – is not a reliable indicator of chlorine input and has margins of error too high to support rigorous statistical evaluation.

Dioxin Output: Rigo et al. obtained their data describing dioxin concentrations in combustor gases from sources in several countries with no common method for sampling and analysis of such gases. Moreover, the data were taken from archival records of early studies as well as reports from relatively current trial burns and other tests. Even contemporary data obtained by a single sampling method and analyzed by a single laboratory are known to have margins of error as high as +/- 30 percent. Consequently, the data relied on by Rigo et al. can be expected to have even higher margins of error.

→ Rigo et al. defined and then tested a hypothesis of limited value by applying statistical methods of questionable suitability to measures that not only appear to be inappropriate but also have levels of uncertainty so high as to render them unsuitable for rigorous statistical analysis.

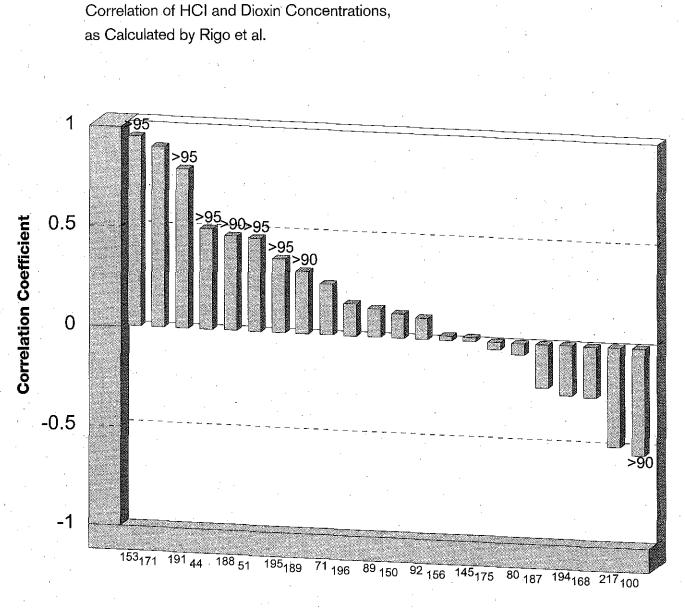


Figure 4-1 Municipal Waste Combustors

22 Facilities by Identification Code

Confidence levels are based on coefficients and p-values from Rigo et al. Those that are 80% and higher are as noted.

Introduction

Dioxin^a generation occurs during combustion or other reactions when both organic matter and an available chlorine source are present. Much evidence suggests that the global dioxin burden stems primarily from the life-cycle^b of chlorine-containing synthetic organic materials (e.g., polyvinyl chloride (PVC) plastic, chlorinated solvents, chlorinated pesticides, chlorine-based bleaching agents, etc.). For this reason, the elimination of dioxin generation at the source can best be achieved, in many cases, by substituting chlorine-free alternative materials. Indeed, many technically feasible and economically competitive cleaner products and processes already exist.

In waste combustion systems, chlorine is the limiting element for dioxin formation. This suggests that the total dioxin output[°] from these systems can be reduced and/or eliminated through a materials policy that curbs chlorine input, as pointed out by an advisory group for the U.K. Department of the Environment:¹

"One of the more obvious primary ways of minimizing TOMPS [toxic organic micropollutants, e.g., dioxins] in incinerators and in other thermal processes is to try to avoid (or reduce) TOMPS, their precursors or fundamental species (such as chlorine or bromine) being included in the feedstock."

Materials policies have already been incorporated into some dioxin abatement efforts:

- A 1996 report from the Intergovernmental Forum on Chemical Safety (IFCS) concluded that it was appropriate and important to consider materials policies in developing strategies to minimize and/or eliminate releases of both the polychlorinated and polybrominated dioxins and furans;²
- The Governing Council of the United Nations Environmental Programme adopted the recommendations of the IFCS report on Feb. 7, 1997, as part of the process of achieving a global, legally binding agreement to eliminate or reduce persistent organic pollutants in the global environment;³
- On November 22, 1996, the American Public Health Association adopted a resolution urging health care facilities and suppliers to reduce or eliminate their use of PVC and other chlorinated plastics that are currently disposed of in medical waste incinerators;⁴
- The Central Pollution Control Board of India ruled in July 1996 that polyvinyl chloride (PVC) can no longer be burned in medical waste incinerators;⁵
- In 1994, the International Joint Commission (IJC) between the U.S. and Canada
 recommended that "...the Parties ... alter production processes and feedstock chemicals so
 that dioxin, furan and hexachlorobenzene no longer result as byproducts" and "... develop

^a The terms "dioxin" and "dioxins" include all of the polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). ^b The term "life-cycle" includes extraction of raw materials, their processing into the usable or salable product, the use of that product, recycling (if any) of the discarded product, accidental or deliberate combustion (e.g., building fires), treatment for disposal (if any) of the discarded product (e.g., incineration), and the return into the environment of the discarded product and/or the residues of its treatment. ^c Total dioxin output includes the quantity of dioxins released in stack gases as well as that released in fly ash, bottom ash, and other residues, such as scrubber water, filtercake from scrubber water treatment, etc..

timetables to sunset the use of chlorine and chlorine-containing compounds as industrial feedstocks and that the means of reducing or eliminating other uses be examined.⁷⁶ This followed the IJC's 1992 conclusion: "We know that when chlorine is used as a feedstock in a manufacturing process, one cannot necessarily predict or control which chlorinated organics will result and in what quantity. Accordingly, the Commission concludes that the use of chlorine and its compounds should be avoided in the manufacturing process;"⁷⁷ and

 In 1992, the German Federal Government enacted a prohibition against using chlorinated and brominated compounds as petrol additives to reduce dioxin release via car exhausts.^a

Scientific support for such materials policies is found among the many studies in which dioxin output from incinerators and other combustors has been shown to increase as chlorine input is elevated. In a smaller number of studies, no relationship has been found between chlorine input and dioxin output.

One of the more recent and widely-publicized studies from the latter category and the subject of this review is "The Relationship Between Chlorine in Waste Streams and Dioxin Emissions from Waste Combustor Stacks," by H. Gregor Rigo, A. John Chandler and W. Steven Lanier. This report is sometimes referred to as the ASME report or the Rigo report.

Primary funding for the report of some \$150,000 came from the Vinyl Institute, which selected the American Society of Mechanical Engineers as contractor to *"provide unassailable objectivity to the study."*⁹ Nonetheless, there appear to be striking discrepancies between the authors' conclusions and the statistical findings presented in their report.

Over and above the obvious discrepancies, it seems that Rigo et al. chose to test a hypothesis of limited value by applying a statistical method of questionable suitability to measures that not only appear to be inappropriate but also have levels of uncertainty so high as to render them unsuitable for rigorous statistical analysis. This review addresses these and other aspects of the report by Rigo et al.

1.0 Scope of the ASME Report

The ASME report addresses several aspects of the chlorine input/dioxin output issue. However, the quantitative relationship between chlorine input and dioxin output from full-scale combustors is the issue of greatest interest from public health and environmental perspectives. For that reason, this review focuses on those segments of the ASME report that pertain to this issue.

The study by Rigo et al. does not evaluate the relationship between chlorine input and total dioxin output from combustors. I.e., they do not examine the relationship between the quantity of chlorine fed into a combustor over a specific period of time and the quantity of dioxins that is released in stack gases, fly ash, and other residues during the same period.

Depending on the category of combustor, Rigo et al. compare dioxin concentrations in combustor^a gases to one or more of the following chlorine-related measures:

- Hydrogen chloride (HCI) concentrations in stack gases;
- Percent chlorine in feed; and
- For cement kilns, chlorine feedrates normalized to daily clinker^b production.

The relationships of these measures to the actual measures of concern, chlorine input and dioxin output, determine in large part the relevance of the ASME report.

1.1 Dioxin Output

According to its title, the study by Rigo et al. compares chlorine in waste streams to dioxin stack emissions. The selection of dioxins in stack emissions rather than total dioxin output for this comparison brings into question the methodology, findings and conclusions of their study.

1.1.1 Dioxin Stack Emissions

Dioxin stack emissions^o are only one, commonly small, portion of a full-scale combustor's dioxin output. For example, a study of eleven European municipal waste combustors found that stack emissions accounted for less than 12 percent of dioxin output. The major share was distributed among fly ash, bottom ash, and other residues.¹

Dioxin stack emissions have been characterized as "nearly independent of the PCDD/F concentrations in the raw gas."² This suggests that dioxin stack emissions correlate poorly, if at all, to total dioxin output.

It is well known that both the magnitude of the dioxin output and its pattern of distribution among combustor residues is influenced by numerous factors. For example, depending on the materials from which they are constructed, wet scrubbers can either reduce or increase dioxins

^a The title of their report and much of the language in its text suggest that Rigo et al. compared various chlorine-related measures to dioxins in stack emissions. However, when evaluating some combustors, they pooled data describing dioxin concentrations in stack gases with data from other sampling locations in the process train, e.g., boiler outlets, secondary combustion chamber outlets, etc. ^b "Clinker" is the material that is collected from the cement kiln and ground into cement.

^C In this review, the term "emissions" is used to refer only to stack emissions, e.g., the quantity of dioxins released from a combustor's stack. (See also footnote "c").

in stack emissions and alter the PCDD/F profile, while adding to the dioxin load in scrubber water and subsequent treatment residues, such as filter cake.³ Other methods that reduce dioxin stack emissions may increase total dioxin output, as has been observed with carbon injection.⁴

In summary, an evaluation of the relationship between chlorine input and dioxin stack emissions from full-scale combustors, such as this study by Rigo et al., provides little if any insight into the relationship between chlorine input and total dioxin output.

1.1.2 Dioxin Concentrations in Stack Gases

Dioxin concentrations in stack gases may be determined using a number of sampling and analytical protocols which, in some cases, have been further modified. Most of these methods have changed considerably during the period of time between the oldest (1984) and the most recent (1994) data in the ASME report's database, as alluded to by the authors:⁵

Rigo et al.: "Reports from the mid-1980's do not reflect the level of detail found in PCDD/F tests conducted in the 1990's ..."

Even with modern procedures applied by a single laboratory to replicate samples from a single combustor over a fixed time period, dioxin measurements may have relatively high margins of error, as acknowledged by Rigo et al.:⁶

Rigo et al.: "TNO (1994) reports that the total PCDD/F concentration uncertainty is +/- 30% for raw data. Extending the analysis to include the effect of diluent correction (Hamil and Thomas, 1976) raises the uncertainty to +/- 35%."

Other studies have found replicate measurements of dioxins in combustor emissions to vary by as much as three orders of magnitude.⁷

Rigo et al. aggregated dioxin measurements taken at the stack with those taken at other sites, such as boiler outlets, secondary combustion chamber outlets, etc. Due to differences in temperature and other factors that affect both formation and capture rates, dioxin concentrations in samples from these various sites commonly span a very wide range. As a result, the overall uncertainties of the dioxin measurements used in the study by Rigo et al. can be expected to be even greater than those for stack concentrations only.

Given the great uncertainties and poor precision of dioxin measurements, which are discussed in more detail in Section 11, small numbers of single-measurement values for dioxin concentrations in combustor emissions, such as those relied upon in many cases by Rigo et al., cannot be expected to meet stringent criteria necessary for statistical analysis.

1.2 Chlorine Input

Rigo et al. frequently employ language indicating that they used chlorine input in their evaluations. However, no direct measures of chlorine input were used in their analyses of municipal solid waste combustors, medical waste incinerators, hazardous waste incinerators, boilers and industrial furnaces, or biomass combustors. In their analysis of cement kilns, Rigo et al. compared dioxin concentrations in stack gases with chlorine feedrates that were normalized relative to clinker production rates, which they did not disclose.

1.2.1 Chlorine Input to Municipal Solid Waste Combustors and Medical Waste Incinerators

For municipal solid waste combustors and medical waste incinerators, Rigo et al. compared dioxin concentrations in gas streams to a surrogate based on output chemistry. The use of this

assumption that "all the chlorine in the waste is converted to HCl or Cl₂ and not tied-up in the residue."

____This assumption is contradicted by numerous studies, as discussed in greater detail in Section 10.2. For example, the efficiency with which the chlorine in materials fed into a combustor is converted into HCI may vary according to the chemical nature of the chlorine, the design of the incinerator,¹⁰ and other factors.

It is also important to note that the measurements of HCl taken during testing of the combustors in the ASME study differed greatly from sampling emissions for dioxin content in the length of time required for sampling. I.e., these two measures were not truly synchronous. This is evident from the description of sampling procedures given by Rigo et al.¹¹

Rigo et al.: "The uncontrolled HCI data comes from a single 1 hour test conducted during the 6 hour PCDD/F sampling period. This is typical of much of the available data since the sampling times for HCI and PCDD/F determinations are different."

Some HCI data may result from even briefer sampling times, for instance near-instantaneous determinations with continuous emissions monitors, while sampling for dioxin analyses sometimes requires considerably more than 6 hours. For example, in Germany, stack samples for dioxin determinations may be collected over a period of 16 hours.¹² Particularly with highly heterogeneous wastes, such as municipal and medical wastes, there is little basis for assuming that one HCI measurement made over a brief period is representative of HCI concentrations during the 4-16 hours throughout which a stack sample is collected for dioxin analysis.

There are also several different methods and modifications of these methods that are used for measuring HCI in stack gases. These can give widely disparate results, as described by USEPA¹³ and acknowledged by Rigo et al.¹⁴ (See Section 10.3 for a more detailed discussion of the limitations of analytical methods for HCI).

Even in carefully controlled experiments at one full-scale combustor, the margin of error of HCI measurements was +/- 28 percent.¹⁵ In short, HCI concentrations in stack gases are not highly reliable or accurate indicators of chlorine input to full-scale municipal waste combustors and medical waste incinerators.

1.2.2 Chlorine Input to Hazardous Waste Incinerators and Boilers and Industrial Furnaces

The ASME report's database includes chlorine feedrates for hazardous waste incinerators and boilers and industrial furnaces. However, Rigo et al. did not assess the relationship between chlorine feedrates and dioxin emission rates. They compared percent chlorine in feed and dioxin concentrations in stack gases.

Percent chlorine in feed simply describes the composition of the feed material and, in the absence of feedrates, tells little about the actual quantity of chlorine that is fed into a combustor. Consequently, it is an appropriate surrogate for chlorine input only when assessing data from one combustor with a constant waste feedrate or when used in combination with data describing waste feedrates.

As the report's database shows, chlorine feedrates to the combustors in this study were seldom constant, even though percent chlorine in feed often was. In other words, percent chlorine in feed cannot be regarded as a reliable, accurate surrogate measure of chlorine in to the full-scale hazardous waste incinerators, boilers and industrial furnaces, and other combustors evaluated by Rigo et al.

2.0 Statistical Analysis

The validity of any statistical analysis depends on many factors including the relevancy of the data, sample size, and sample quality. If the data are not sound measures or are of poor quality, the utility of the resulting analyses will be greatly decreased or eliminated entirely.

Rigo et al. evaluated the relationship of measures related to chlorine input and dioxin concentrations in combustor gases primarily in two ways: (1) simple correlation analysis and (2) multivariate analysis. Each approach has certain limitations. Further, their use was based on the unsupported assumption that the combustors in their study were operating in a state of thermodynamic equilibrium during sampling and analysis.

Correlation analysis is useful when performed on two variables that have a linear relationship. However, if their relationship is exponential, as was suggested for chlorine input and dioxin output by De Fre and Rymen (1989)¹, these variables will necessarily show a reduced correlation due to model misspecification — use of the wrong model. On the other hand, in multiple comparisons such as those in the ASME study, some correlations will occur simply as a matter of chance.

Rigo et al. carried out multivariate analyses on data from several of the municipal waste combustors in their study and the aggregated data from municipal waste combustors, medical waste combustors, hazardous waste incinerators and cement kilns. One important factor governing the usefulness of such analyses is the state of knowledge of the reaction mechanism or mechanisms of dioxin formation. If reaction mechanisms are not sufficiently understood to allow adequate mathematical modeling, multivariate analysis can, like correlation analysis, have misleading results:²

"...[T]he statistical efficiency of multivariate models comes at a price, which is the assumption that a given mathematical form describes the relation of study variables. ... If the model is incorrect, however, the improved efficiency may be negated by an intolerable degree of bias; furthermore, the bias will not be detected without special efforts, and the caution that such efforts characterize can easily be eroded by the seductive appeal of a neat, efficient-looking model."

Much has been learned about dioxin formation during combustion. However, much remains to be learned. In particular, little is known about competing and/or complementary formation pathways and their interactions within the complex, constantly-fluctuating environment of a full-scale incinerator.

Correlation analyses are the only statistical evaluations presented by Rigo et al. for all of the individual municipal waste combustors, medical waste incinerators and hazardous waste incinerators in their study. Consequently, this review focuses primarily on the statistical values obtained by this method, which served as the basis of their facility-specific conclusions.

2.1 Basic Elements of Statistical Analysis

When small numbers of samples are used to characterize a large population, they must be carefully randomized in order to be meaningful. The randomization should be applied both to

from each individual combustor. Correlation coefficients calculated on relatively small samples are often unreliable since they are subject to considerable chance fluctuations,³ and are less likely to yield statistically significant results.

The study by Rigo et al. was designed to test the "... hypothesis that fuel chlorine content and combustor flue gas PCDD/F concentrations are related..."⁴ In an analysis such as this, statisticians always define two hypotheses: the alternative hypothesis and the null hypothesis. In this case, the alternative hypothesis is the premise described above by Rigo et al. The unstated null hypothesis is that fuel chlorine content has no effect on dioxin concentrations in combustor flue gas.

It is important to note that the alternate hypothesis defined by Rigo et al. suffers from two serious flaws: (1) those portions of the total dioxin output that are distributed to ash and other residues are not considered; and (2) comparisons of fuel chlorine content and dioxin concentrations in stack gases are meaningful only under certain conditions – constant waste feedrates and stack gas flowrates – which did not exist at many of the facilities when the data used by Rigo et al. were collected. The more meaningful alternate hypothesis, which was not tested by Rigo et al., is the hypothesis that chlorine input and total dioxin output are related.

The null hypothesis is actually the hypothesis that is tested in statistical analysis.^a If the results of analysis lead to the rejection of the null hypothesis, then the alternate hypothesis is accepted. A key decision made by statisticians in designing a statistical study is choosing the confidence level – the critical probability level at which the null hypothesis will be rejected.

In other words, in their statistical analyses, Rigo et al. were actually testing the premise that the mass of chlorine input to combustors has no relationship to the quantity of dioxins emitted in stack gases. Rigo et al. chose their criteria for rejecting this null hypothesis as follows:⁵

Rigo et al.: "Statistically significant findings had to exceed the 95% confidence level and be found in two or more similar test programs to attribute probable causality to the relationship. Finding the same behavior in the majority of experiments where it should appear is needed to confirm probable causality."

By selecting a stringent confidence level, greater than 95 percent (>95 percent), Rigo et al. reduced the likelihood of "false positive" errors^b – concluding that there is no relationship between chlorine input and dioxin emissions when, in fact it does exist. It appears, therefore, that the data may have been collated and analyzed with a pre-determined outcome in mind.

2.2 Sample Size and Quality

Rigo et al. describe their database as containing over 1,900 test results from 169 combustion facilities in seven categories: municipal waste combustors, medical waste incinerators, hazardous waste incinerators, boilers and industrial furnaces, cement kilns, biomass combustors, and laboratory-, bench- and pilot-scale combustors.⁶

Rigo et al. offer no evidence that the combustors in their database were randomly selected from the wide array of combustors for which relevant data are available. Indeed, as documented in the sections of this review that are devoted to each of the six full-scale

^a "We evaluate the null hypothesis by assuming it is true and test the reasonableness of this assumption by calculating the probability of getting the results if chance alone is operating. If the obtained probability turns out to be equal or less than a critical probability level called the alpha (a) level, we reject the null hypothesis. Rejecting the null hypothesis allows us, then to accept indirectly the alternative hypothesis since, if the experiment is done properly, it is the only other possible explanation." from Pagano, R.R., "Understanding Statistics in the Behavioral Sciences," Second Edition, St. Paul, MN: West Publishing Company, 1986.

^b In decision theory, this is known as a "Type I Error," a conclusion that an important relationship exists when there is actually none. A "Type I Error" is a conclusion that an important relationship does not exist when it actually does. From Freund, J., "Modern Elementary Statistics," Fourth Edition, Englewood Cliffs, NJ: Prentice-Hall, Inc., 1973.

combustor categories, Rigo et al. also omitted some of the combustors in their database from their analyses. In other words, the sample of combustors selected by Rigo et al. for statistical analysis may contain significant bias.

The validity of any statistical analysis also depends on the quantity of data available. Whether sufficient data exist for each combustor to lend sufficient power to the analyses by Rigo et al. is questionable. As discussed in the sections devoted to each combustor categories, the answer to this question is "No." Furthermore, numerous inconsistencies are apparent from which data were used in the facility-specific statistical analyses.

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THE BURNING QUESTION: CHLORINE & DIOXIN

3.0 Confounding Factors

Rigo et al. identified a number of factors that may have confounded the results of other studies in which chlorine input and dioxin emissions exhibited positive relationships. In some cases they noted the potential influence of such factors when their analyses of the data from these studies corroborated the original findings. However, Rigo et al. gave little or no consideration to these same factors when drawing conclusions from their facility-specific analyses.

For example, Rigo et al. discuss outliers and their influences on statistical outcomes, and they sometimes identified and set aside outliers in their critiques of other studies with positive outcomes. In their own study, however, they used all data points in their statistical calculations.

Many of the confounding factors are quite general, such as "...no ash catalyst chemistries (copper and iron), no mass balances, incomplete data" Others can be grouped into the two general categories below.

3.1 Design and Operating Conditions

In the ASME report, numerous factors related to the design and operation of combustion facilities are identified as influencing emission data, e.g., "... flue gas temperature, intentional experimental changes, salt versus organochloride spiking, design differences ..."²; "... flue gas moisture ..."³; "... different types of waste combustors and APCS [air pollution control systems]..."⁴; "... time to reach stabilization ... from a minimum of three hours to more than eight hours from a cold start..."⁵, also described as "... lag in system response ..."⁶ and "... facility ... and start-up condition effects ...".⁷

Another interesting factor discussed by Rigo et al. is the *"fly wheel effect,"*^a, in which the release of dioxins following the input of chlorine containing materials is delayed and protracted. They caution that *"failure to provide adequate stabilization time between conditions calls into question identification of the cause of any change in PCDD/F concentrations. ..."*.^a

Rigo et al. acknowledge that "different facilities behave in dissimilar manners"¹⁰ and that changes in the "underlying waste stream"¹¹, and waste characteristics, such as "sludge burning"¹², influence the results of input/emissions data. They also note that "[s]tack chlorine level changes and PCDD concentration changes are both induced by the APCS," confounding results for some combustors.¹³ For example, they observed that "… stack concentrations vary between units with no APCS and those with advanced APCS."

While evaluating the results of several studies in which a positive correlation between chlorine input and dioxin output was found, they drew particular attention to the importance of timing. For example, they observed in one case that "... PCDD/F concentrations may not have reached steady state levels for the intended operating condition and confounded data may be being analyzed."¹⁴ In another they noted as follows:

Rigo et al.: "Runs conducted first thing in the morning after operating the furnace overnight on normal MSW would have had a different amount of cross-contamination than a test conducted shortly after a change in condition."¹⁵

THE BURNING QUESTION: CHLORINE & DIOXIN

3.2 Sample Collection and Analysis

Rigo et al. also identified confounding factors related to sample collection and analysis. For example, in their critiques of other studies, they made frequent references to the significance of *"sampling location, "¹⁶* alluding to differences in *"... tests performed at different locations (i.e., boiler outlet, stack, etc.)".* ¹⁷ In one of their critiques, they cautioned as follows:

Rigo et al. "Sample location and sampling conditions are potentially important confounding variables"¹⁸

In another, they explicitly noted "...the influence of sampling location on PCDD/F concentrations ..."¹⁹. For example, they commented as follows:

Rigo et al.: "In the case of furnace outlet data, interpretation must recognize that PCDD/F test methods have not been validated at this location. High temperature sampling could result in catalytic destruction of PCDD/F ...";²⁰

In evaluating other studies, the authors of the ASME report also acknowledged confounding factors related to sample analysis. For example, they noted "... *limitations in the sampling and analysis techniques at low concentrations* ..."²¹ and referred several times to "... *laboratory* ... *effects* ..."²², e.g., "... *low laboratory recoveries* ...".²³ In their assessment of another study, they noted as follows:

Rigo et al.: "The most obvious difference identified between tests at a given facility was attributed to analytical laboratory difference."²⁴

In particular, Rigo et al. also acknowledged problems encountered when assessing low dioxin concentrations, drawing attention to "...the U.S. practice of reporting Below Quantitation Limits [BQL] and BDL results as zeros rather than as best estimates and the detection limit."²⁵ They identified difficulties caused by "...between laboratory differences or numerous low and BDL [below detection limit] concentrations in the samples" ²⁶ and "different numbers of below detection limit [BDL] results".²⁷

Another confounding factor identified by Rigo et al. in their evaluations of other studies were sampling train contamination, as follows:

Rigo et al: "Significantly different results, either in terms of the signature or the quantity of material, in any triplicate during a particular test series could result from either the lack of equilibration time before testing started or from sampling train contamination."²⁸

Rigo et al.: "Great care is exercised when recovering and cleaning Method 23 sampling trains, yet USEPA reported in the method evaluation (MRI, 1990) that trains should not be switched between clean and dirty locations due to possible hysteresis effects."²⁹

It is difficult to see the rationale for the use of such data to investigate correlations between chlorine input and dioxin output from full-scale combustors. As discussed below, others have concluded that such efforts are too simplistic for the complexities of interactive, multiple pathways of formation of micropollutants such as dioxin that are taking place within the constantly fluctuating environment of full-scale combustion systems.

3.3 Limitations of Data from Full-Scale Combustors

As mentioned earlier, Rigo et al. relied on data obtained during trial burns, compliance tests and other similar projects that were, in most cases, carried out for some purpose other than exploring the relationship between chlorine input and dioxin emissions. Many regard the acquisition from full-scale combustors of data that is sufficiently reliable for such comparisons to be difficult, if not impossible, even when tests are designed and carried out for that specific

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purpose. For example, the Danish Ministry of the Environment offered the following observations about other studies that have explored the relationship of chlorine input to combustors and dioxin output:³⁰

"Reports are released which conclude that there is no correlation between the dioxin formation and the PVC content in the waste and reports are released which conclude that there is a correlation. It seems most likely that in the test design and running of the tests, there are many difficulties in keeping all relevant parameters constant (e.g., combustion conditions) and one variable only (e.g., chlorine content)."

Cains and Dyke (1994), researchers in the United Kingdom are similarly critical of attempts to define the relationship of chlorine input and dioxin output by comparing data obtained from full-scale waste combustors.³¹

"Generally, the global comparisons in this work have not identified clear causal effects. ... This is hardly surprising, given that each plant is designed to work under a specific set of conditions with specific types of feedstock."

Other leading European researchers, such as Fangmark et al. (1991) have pointed out the difficulties of acquiring useful data from directed experiments with full-scale combustors:³²

"...[M]ajor drawbacks with full scale studies are that it is difficult to control operating parameters such as temperatures, CO concentrations, and fuel composition which collectively make it impossible to perform experiments that are fully comparable."

Commenting on the U.S. Environmental Protection Agency Waste Incineration Research Program in 1996, the Agency's Science Advisory Board was both blunt and succinct on the topic of full-scale combustor data, as follows:³³

"In fact, the variability in full-scale performance is unlikely to result in any meaningful data at all."

As discussed earlier, evidence of any discernible trend from statistical evaluations of the data in the ASME database must be regarded as most unexpected.

4.0 Municipal Waste Combustors

Rigo et al. began their discussion of this category by stating, "Data from the 63 MWC facilities in the database were used in this portion of the study."¹ Later in their report, the number of facilities relied on for their quantitative evaluation is reported as 27 facilities that have 38 individual combustors.² In yet another section, the number is given as 26 facilities that have 31 combustors.³ Finally, in their summary findings for municipal waste combustors, Rigo et al. refer to 20 facilities with no indication of their identities or the number of combustors at these facilities.⁴ These inconsistencies need to be addressed.

4.1 Analyses by Rigo et al.

For municipal waste combustors, Rigo et al. assumed hydrogen chloride (HCI) concentrations in stack gases to be reliable indicators of chlorine feedrates. According to Rigo et al., their statistical analyses of the relationship between the stack gas concentrations of HCI and dioxin led to the following conclusion:⁵

Rigo et al.: "On a facility-by-facility basis, 17 [municipal waste combustion] facilities displayed no relationship — two increased and one decreased."

This conclusion can be compared to the statistical values calculated by Rigo et al. which were excerpted from Appendix D-1 of their report and listed in Table 4-1. These values and their associated confidence levels can be summarized as follows:

On a facility-by-facility basis, a positive relationship between HCI and dioxin concentrations was found at 15 of 22 municipal waste combustion facilities. This positive correlation was statistically significant at confidence levels >95 percent at five facilities; >90 percent at two facilities; and <80 percent at the remaining eight facilities. Among the facilities exhibiting a negative correlation, this relationship was statistically significant at a confidence level >90 percent at one facility, while the remaining six had confidence levels <80 percent.

As illustrated in Figure 4-1, the statistical values from the ASME report clearly show the predominance of positive correlation. In contrast, Rigo et al. presented the aggregated data in a scatter plot, reproduced as Figure 4-2, in which no relationship is discernible.

As noted above, Rigo et al. included 20 facilities in their conclusion for this combustor category .⁶ In contrast, a review of Appendix D-1 of the ASME report indicates that they carried out statistical evaluations of data from 22 municipal waste combustion facilities. Moreover, their database in Appendix C-1 contains the requisite HCI and dioxin data for 28 facilities. This suggests that, of 28 facilities included in their database, one quarter were excluded from the final evaluation. No acknowledgment or explanation was given for these omissions.

Data were handled in such a way that any relationship between HCI and dioxin is unlikely to have been discernible. As mentioned earlier, Rigo et al. commingled data from three separate

^a Rigo et al. use the terms "facility" and "facilities" to mean a site or sites at which there are one or more combustors. In a search of Appendix C-1 of the ASME report, only one municipal waste combustion facility was found to be the site of more than one combustor with the requisite HCI and dioxin data. Rather than evaluating each of the three combustors at this site, Rigo et al. aggregated the data and calculated a single correlation coefficient and other statistical values.

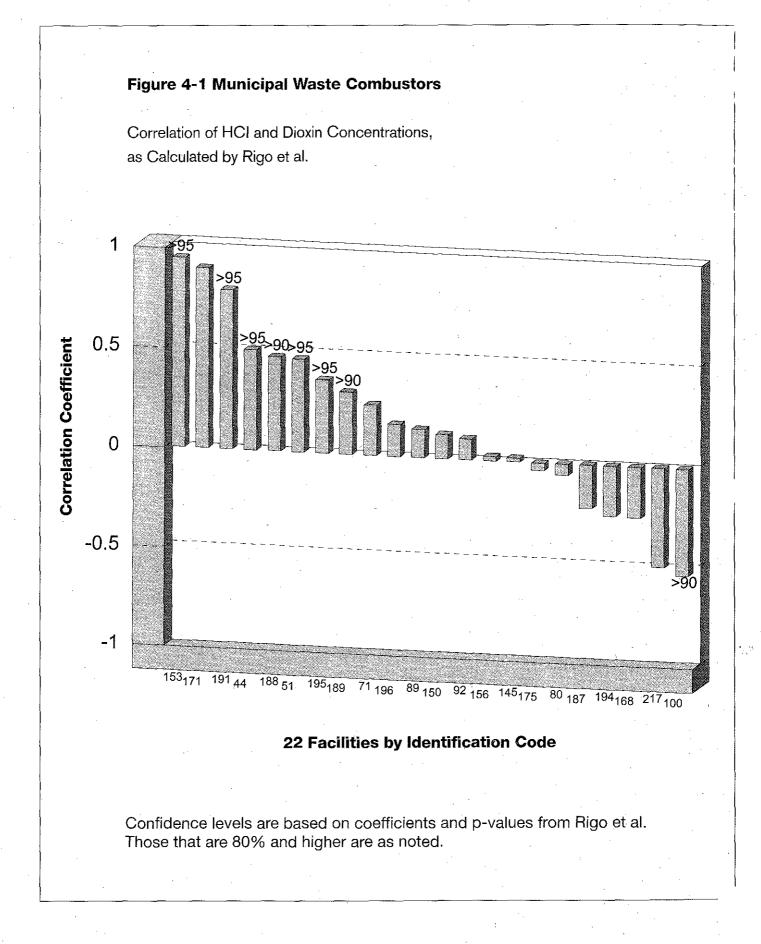


Table 4-1 Municipal Waste Combustors

Statistical Data from Rigo et al.

Positive Correlation at >95% Confidence Level

RRID	Facility	- ·	n	R	р	
153	Detroit		6	0.94794	0.0040	
191	Helsingor		8	0.79663	0.0180	
44	Lancaster (3 Combustors*)	1	18	0.50202	0.0338	
51	Pittsfield (Vicon) (3 Sampling Sites**)		38	0.46688	0.0031	
195	Refa (2 Test Periods***)	 	30	0.36768	0.0456	

Positive Correlation at >90% Confidence Level

RRID	Facility		n	R	р	
188	Kara		15	0.47298	0.0750	
189	Reno Syd (2 Test Periods)	 	33	0.31156	0.0776	_

Positive Correlation at Confidence Levels <80%

RRID	Facility	n	R	р	
156	Hartford (2 Sampling Sites)	26	0.02270	0.9123	
71	Horsholm (SO ₂ Reagent)	26	0.25478	0.2091	
150	MERC (2 Sampling Sites)	8	0.12076	0.7758	
92	Quebec	13	0.10524	0.7322	
145	Quebec SS (3 Sampling Sites)	35	0.01812	0.9177	
171	Roosendaal	3	0.89936	0.2881	
196	Thyra	7	0.16151	0.7294	
89	Wurtzburg (3 Sampling Sites)	30	0.14258	0.4523	

Negative Correlation at >90% Confidence Level

RRID	Facility		n	R	<u>р</u>	•
100	Albertslund		11	-0.53511	0.0898	

Negative Correlation at Confidence Levels <80%

RRID	Facility	n	R	p
217	Amager	8	-0.49805	0.2091
194	Brondby	14	-0.24906	0.3905
168	Oswego (3 Sampling Sites)	21	-0.25401	0.2665
175	PRRI	7	-0.03593	0.9390
187	Reno Nord (3 Test Periods)	37	-0.21551	0.2089
80	Westchester (3 Sampling Sites)	37	-0.0560	0.7420

No Regression Results Presented by Rigo et al.

RRID	Facility			n	R	p	
202	Arhus Nord	•					
94	AVR						
116	Leeuwarden						
91	PEI		1				
169	Sioux Center						
176	Zaanstad					<u> </u>	

No Simultaneous Measures of HCl and Dioxins in Database

RRID	Facility		n	R	p
179	AVI		 		
95	Gevudo	1	,		

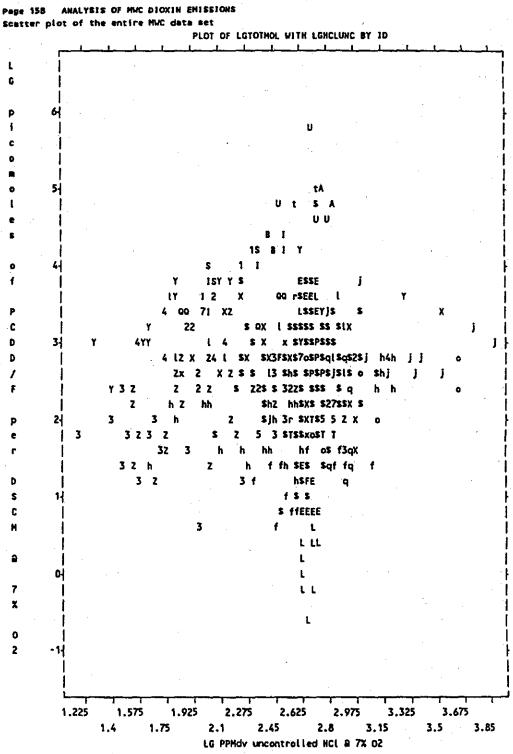
* Rigo et al. combined data from three separate combustors at this facility.

** Dioxin data were collected not only from the stack but other locations as well and these data were aggregated for analysis by Rigo et al.

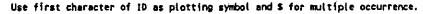
* Dioxin and HCI data were collected during tests separated by periods of time ranging from weeks to years.

Figure 4-2 Municipal Waste Combustors

Scatter Plot from Rigo et al.



479 cases plotted.



Statistical Values by Greenpeace

Positive Correlation at >95% Confidence Level

RRID	Facility	n	R	p
153	Detroit	6	0.947957	0.00191
191	Helsingor	8	0.811371	0.011441
44	Lancaster (1991 & 1992) (3 Units)	18	0.503409	0.03235
51	Pittsfield (Vicon) (3 Sampling Sites)	 38	0.46717	0.003055
195	Refa (1987 and 1988)	30	0.370425	0.043584

Positive Correlation at >90% Confidence Level

RRID	Facility	n	R	р	
202	Arhus Nord	4	0.794256	0.161631	
188	Kara	15	0.489098	0.062741	
189	Reno Syd (2 Test Periods)	<u>a</u> 33	0.300072	0.089451	

Positive Correlation at Confidence Levels <80%

ŔŔĬĎ	Facility	n	R	<u>р</u> .
94	AVR	. 3	0.334092	0.75688
156	Hartford (2 Sampling Sites)	26.	0.023061	0.910929
71	Horsholm (with and without SO ₂ rgnt)	- 26	0.25486	0.20845
150	MERC (2 Sampling Sites)	8	0.121534	0,772949
175	PBBI	7	0.025651	0.956109
145	Quebec SS (3 Sampling Sites)	35	0.017494	0.92053
187	Reno Nord (3 Test Periods)	37	0.203884	0.225907
171 -	Roosendaal	3	0.899432	0,175847
169	Sicux Center	9	0.0189	0.961337
196	Thyra	7	0.212119	0.644636
89	Wurtzburg (3 Sampling Sites)	30	0.14213	0.45351
176	Zaanstad	6	0.148469	0.776057

Negative Correlation at >95% Confidence Level

116 Leeuwarden 3 -0.978437 0.041788	RRID	Facility	n	R	p
	116	Leeuwarden	3	-0.978437	0.041788

Negative Correlation at >90% Confidence Level

	<u> </u>	
100 Albertslund 11 -0.541314 0.082		

Negative Correlation at Confidence Levels <80%

RRID	Facility	n	R	р — —
217	Amager	 8	-0.493309	0.207375
194	Brondby	14	-0.272172	0.345058
168	Oswego (3 Sampling Sites)	21	-0.254012	0.265824
91	PEI (2 Sampling Sites)	 21	-0.145204	0.529623
92	Quebec	13	-0.10.532	0,735896
80	Westchester (3 Sampling Sites)	 37	-0.056064	0.741664

No Simultaneous Measures of HCI and Dioxins in Rigo Database

RRID	Facility		 n	R	р	
179	AVI	 		 I		
95	Gevudo	 		 	 -	

combustors and performed a statistical analysis of these aggregated data, rather than analyzing each individual combustor. For four facilities, they commingled data from two test series, which were conducted as much as a year apart.

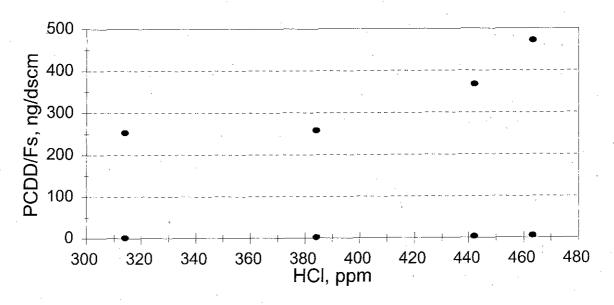
Rigo et al. acknowledged and discussed *"…the influence of sampling location on PCDD/F [dioxin] concentrations."*⁷ Nonetheless, at 11 MWC facilities, they compared HCl concentrations with mixtures of dioxin measurements that included not only samples taken at the stack but also those taken at other points in the system, e.g., the boiler outlet, secondary combustion chamber outlet, etc.

This aggregation of data across implicit barriers obviously obscured the relationship between HCl and dioxin. For example, when Rigo et al. commingled dioxin measurements taken at the stack with those taken at the boiler outlet at one municipal waste combustor, their comparison of these aggregated data with HCl concentrations showed only a very weak positive correlation coefficient of negligible significance, as shown in Figure 4-3. However, when data from these two sampling sites were analyzed separately, HCl and dioxin concentrations showed a very strong positive correlation with high confidence at each sampling site, as illustrated in Figures 4-4 and 4- 5.

Figure 4-3 Municipal Waste Combustors

Merc Aggregate Data.

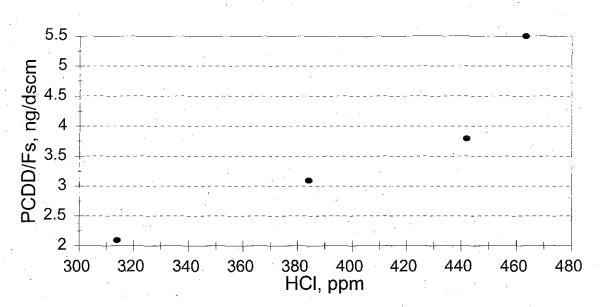
RRID 150 MERC (1988) All Sample Locations.



Statistical Values from Rigo et al.: Correlation Coefficient, r= 0.12076, p- value= 0.7758

Figure 4-4 Municipal Waste Combustors

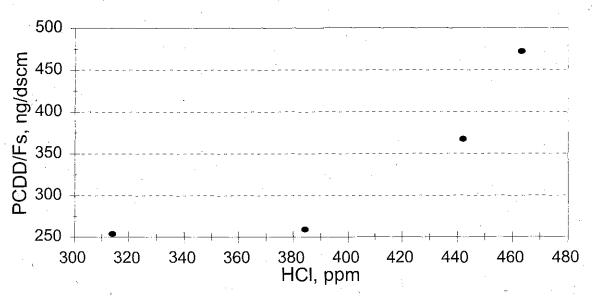
Merc Stack Data. RRID 150 MERC (1988). Sample Location - Stack 1



Statistical Values from Reanalysis: Correlation Coefficient, r = 0.961182, p- value = 0.016028

Figure 4-5 Municipal Waste Combustors

MERC Outlet Data. RRID 150 MERC (1988). Sample Location 2 - Boiler Outlet



Statistical Values from Reanalysis:

Correlation Coefficient, r = 0.87335 p- value = 0.085001

4.2 Greenpeace Analyses of Raw Data from Rigo et al.

As described earlier, the ASME database contains data identified as simultaneous measure of HCI and dioxin concentrations in the stack gases of 28 municipal waste combustion facilities. Following the same general approach as that by Rigo et al., correlation coefficients and p-values were calculated using the logarithms of these variables.^b As shown by the results listed in Table 4-2, these analyses by Greenpeace corroborated, with a few exceptions, the statistical values presented by Rigo et al.

At 20 of the 28 facilities, HCl and dioxin concentrations showed a positive correlation, as shown in Figure 4-6. In other words, at some 70 percent of the municipal waste combustion facilities in the ASME database, dioxin concentrations increased with rising HCl concentrations. This positive trend was statistically significant at five facilities with >95 percent confidence; >90 percent confidence at three; and <80 percent confidence at twelve. Data from eight facilities exhibited a negative correlation which was statistically significant at one facility with >95 percent confidence; one facility, >90 percent confidence; and <80 percent at five.

Evidence of any dominant trend, whether positive or negative, from data so diverse in origins as that from these 28 facilities is entirely unexpected. These data were produced by a mixture of constantly evolving sampling and analysis methods, coming as they do from facilities in five different countries with no common method[®] during a period when sampling and analysis methods were undergoing considerable change. As discussed in greater detail in Sections 10 and 11, these and related factors can be expected to yield data that vary greatly in their precision and accuracy and, consequently, their comparability.

As indicated in Table 4-3, these evaluations of the relationship of HCl and dioxin concentrations in stack gases of municipal waste combustors are based on a very small, non-random sample of these combustors. The 28 facilities for which the ASME database contains both HCl and dioxin data represent only 1.1 percent of the 2,583 MWCs operating in 13 of the industrialized nations.⁹

In their report, Rigo et al. also discussed having aggregated and analyzed HCl and dioxin data from ten of the Danish MWC facilities, which constituted the largest block of MWC facilities in their assessment. They reported a *"weak [positive] relationship … that confirms the*

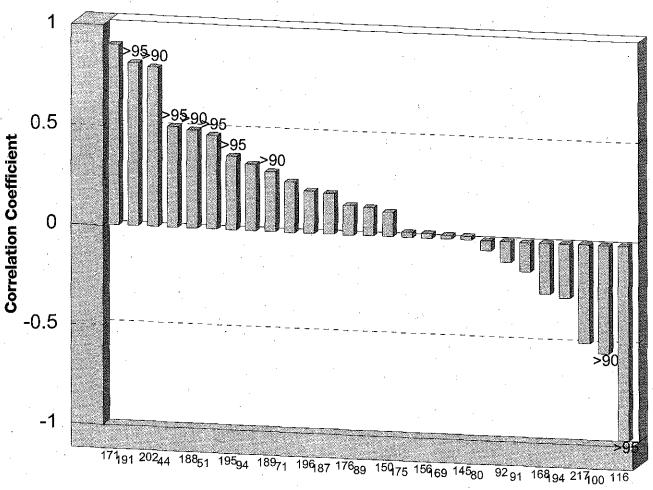
Location Facilities Combustors Percent of Nation's MWCs[®] Denmark 11 22 % 11 U.S. 8 10 <5 % Canada 23 % 4 4 Netherlands 4 4 27 % Germany 1 2%

Table 4-3 Municipal Waste Combustors in ASME Report

^b Rigo et al. carried out their statistical evaluations using the logarithms of HCl concentrations and dioxin concentrations, converted to picomoles per dry standard cubic meter. The analyses by Greenpeace were carried out using the logarithms of HCl concentrations and dioxin concentrations, expressed as nanograms per dry standard cubic meter. Comparisons of the two methods of expressing dioxin concentrations showed no significant difference.

Figure 4-6 Municipal Waste Combustors

Correlation of HCI and Dioxin Concentrations -Greenpeace Analysis of Data from Rigo et al.



28 Facilities by Identification Code

Confidence levels greater than 80% are noted.

original findings."11

Their statistical values cannot be corroborated since they did not present their analysis. However, their finding of a weak positive relationship between HCI and dioxin was confirmed reanalysis of the aggregated data. The reanalysis also showed that, although the positive correlation is weak (r = 0.1485), it is statistically significant with a very high degree of confidence, e.g., >95 percent.

In summary, despite many factors that can be expected to obscure any dominant trend in the relationship of HCI and dioxin concentrations in stack gases, both the analysis by Rigo et al. and the analysis by Greenpeace reveal that increasing HCI concentrations were accompanied by rising dioxin concentrations at two-thirds or more of the municipal waste combustion facilities assessed.

5.0 Medical Waste Incinerators

Two of the medical waste incinerators in the quantitative assessment by Rigo et al. were located in Denmark, while the remainder were in the U.S. The data from these incinerators were collected during tests carried out between 1986 and 1993. It is also important to note that, according to the ASME database, most but not all of the U.S.-based medical waste incinerators were burning both medical waste and municipal solid waste while the emission data were obtained.

5.1 Analyses by Rigo et al.

Again using HCl as a surrogate for chlorine feedrate, Rigo et al. assessed the relationship between HCl and dioxin concentrations in gas streams of medical waste incinerators and concluded as follows:¹

Rigo et al.: "Of the 17 plants [medical waste incinerators] with sufficient simultaneous data to explore the relationship, 14 showed no statistically significant trend, two increased and one decreased."

In Table 3.4-1 of their report, Rigo et al. listed 19 medical waste incineration facilities with one combustor each.² In Figure 3.5-4, a scatter plot of HCl versus dioxin concentrations, they listed 24 facilities. Included among these are six incinerators for which no uncontrolled HCl data are presented in their database; one which has only two data pairs, which are too few for statistical analysis; and one which is not listed in their database.

Rigo et al. presented statistical analyses for only 18 medical waste incinerators in Appendix D-2 of their report.³ However, complete analysis should be possible for only 15 of these, since there are no suitable HCl data in the ASME report's database for two units and there are only two data pairs for the third.⁴ In their statistical analyses of the data from five medical waste incinerators, Rigo et al. calculated correlation coefficients using dioxin data that consisted of the commingled values obtained at both the stack and at other sampling locations.

According to statistical values excerpted from the ASME report and presented in Table 5-1, Rigo et al. actually found that increasing HCl concentrations were associated with higher dioxin concentrations at two-thirds of the medical waste incinerators in their study. The results of their analyses and associated confidence levels are illustrated in Figure 5-1 and summarized as follows:

Concentrations of HCl and dioxin exhibited a positive correlation at 10 of 15 medical waste incinerators. Among these, confidence levels were >95 percent at two facilities, >90 percent at one, >80 percent at two, and <80 percent at five. At the remaining five medical waste incinerators, HCl and dioxin showed a negative correlation with >95 percent confidence at one facility and <80 percent confidence at four facilities.

The predominance of positive correlations that was found in the facility-specific analyses by Rigo et al. is readily visible in Figure 5-1. It is interesting to compare this depiction of Rigo et al.'s statistical values with the graphical presentations of medical waste incinerator data given in their report and shown here in Figures 5-2 and 5-3.

Table 5-1 Medical Waste Incinerators -

Statistical Data from Rigo et al.

Positive Correlation at >95% Confidence Level

RRID	Facility		n	R	p
84	AMI Central		9	0.97287	0.0000
203	Frederikssund	:	6	0.962 <u>37</u>	0.0021

Positive Correlation at >90% Confidence Level

RRID	Facility	,	n	R	p	
214	Borgess (2 Sampling Sites)	·	11 -	0.55923	0.0737	

Positive Correlation at >80% Confidence Level

RRID	Facility	n	R	p
190	Kaiser (2 Sampling Sites)	4	0.89140	0.1086
207	Lenoir	9	0.55092	0.1242

Positive Correlation at Confidence Levels <80%

RRID	Facility	 n	R	р	
208	Cape Fear	9	0.41341	0.2687	
132	Cedars Sinai (2 Sampling Sites)	5	0.42033	0.4810	
198	St. Bernardines	3	0.74254	0.4672	
199	Sutter	3	0.47290	0.6864	
211	U. of Michigan (2 Sampling Sites)	-6	0.30728	0.5536	

Negative Correlation at >95% Confidence Level

RRID	Facility	· .	<u>n</u> .	R	р
213	Morristown (2 Sampling Sites) (Hg Rgnt)	·····	12	-0.86203	0.0003

Negative Correlation at >80% Confidence Level

RRID Facility

Negativ	Negative Correlation at Confidence Levels <80%						
RRID	Facility	n	R	p			
193	Huldovre	6	-0.14038	0.7908			
46	Rochester	3	-0.86035	0.3405			
206	Stanford	6	-0.06997	0.8952			
_205	USC Medical	3	-0.2137	0.8629			

Miscellaneous Facilities

RRID	Facility	 n	R	р	
385	Clean Harbors		· ·		
123	Humber ²				
126	Jordan Hospital ³			i.	
197	St. Agnes 4				

¹ No linear regression was presented for this facility. ² The database contains as uncentralied blot, data fa

² The database contains no uncontrolled HCI data for this facility.

³ Rigo et al. performed a linear regression on the data from this facility. However, their database contains no uncontrolled HCl data for this facility.

This facility had only 2 datapoints, which are not sufficient to determine a valid correlation coefficient.

R

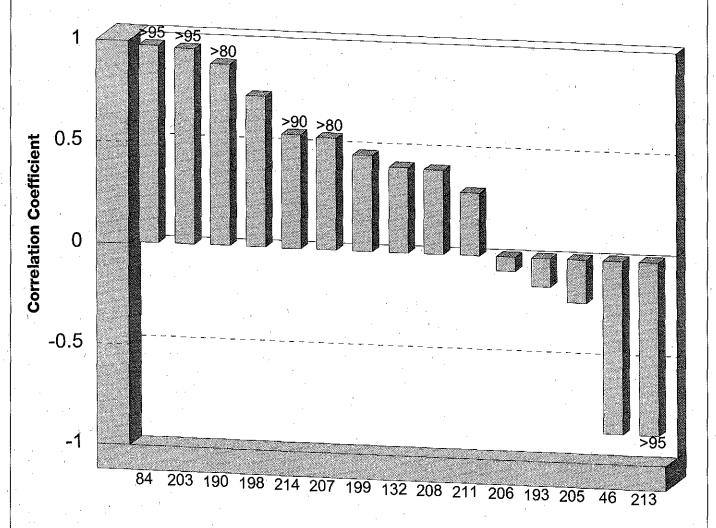
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Figure 5-1 Medical Waste Incinerators -

Statistical Values by Rigo et al.

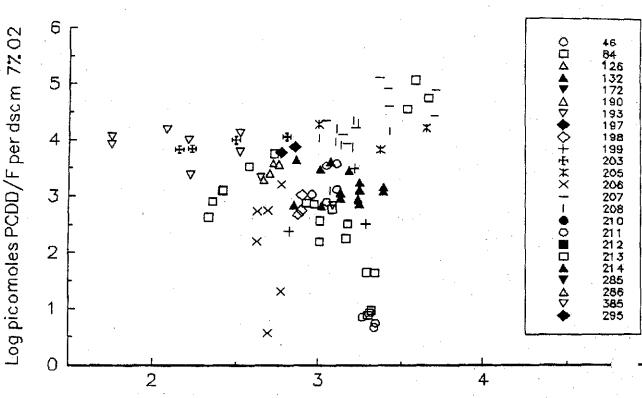
Correlation of HCI and Dioxin Concentrations, as Calculated by Rigo et al.



15 Facilities by Identification Code

Confidence levels are based on coefficients and p-values from Rigo et al. Those that are 80% and higher are as noted.

Figure 5-2 Medical Waste Incinerators -



Scatter Plot by Rigo et al.



DIOXIN

R

THE BURNING QUESTION: CHLORINE

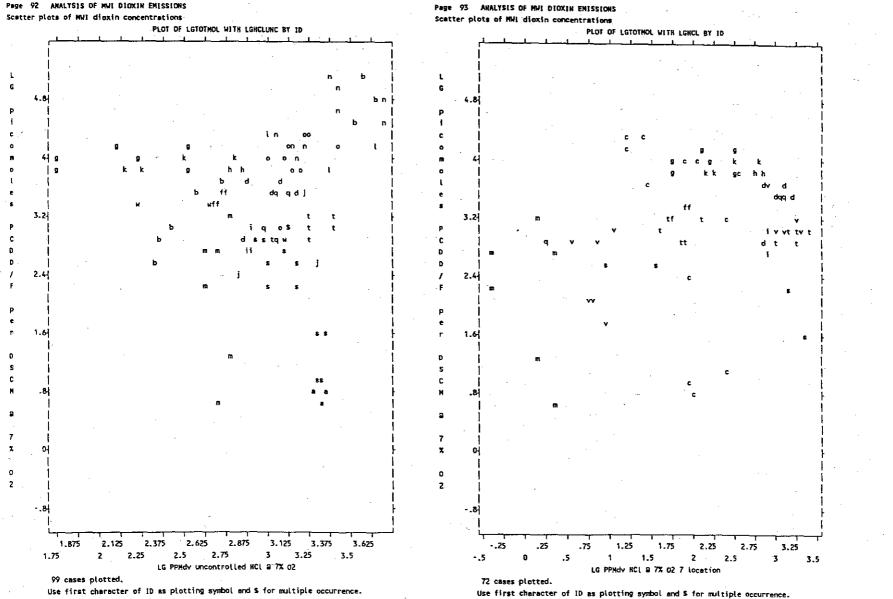


Figure 5-3 Medical Waste Incinerators

Scatter Plots by Rigo et al.

ŝ

THE BURNING QUESTION: CHLORINE ŵ DIOXIN

5.2 Greenpeace Analyses of Raw Data from Rigo et al.

As noted above, the assessment of medical waste incinerators presented in the ASME report suffers from numerous inconsistencies. However, using the same general procedur followed by Rigo et al., Greenpeace calculated the correlation coefficients for HCl and dioxin concentrations listed in Table 5-2. These statistical values, which are also illustrated in Figure 5-4, can be summarized as follows:

Increasing HCl concentrations were associated with elevated dioxin concentrations at 11 of 16 medical waste incinerators. The positive correlations of these variables were statistically significant as follows: two incinerators, >95 percent confidence; one, >90 percent confidence; two, >80 percent confidence; and six, <80 percent confidence. HCl and dioxin were found to correlate negatively at five facilities. The correlations were statistically significant at a confidence level of >95 percent at one incinerator and <80 percent at the remaining four.

Statistical analyses by both Rigo et al. and Greenpeace show that dioxin concentrations rose with increasing HCl concentrations at two-thirds of the medical waste incinerators. As expected from data of diverse quality, confidence levels for the correlations were generally low. However, the levels of confidence achieved also support the predominance of positive correlations.

Table 5-2 Medical Waste Incinerators -

Greenpeace Analysis of Raw Data

Positive Correlation at >95% Confidence Level

RRID	Facility		n	R	p
84	AMI Central	· · · · ·	9	0.97486	2.8E-06
203	Frederikssund		6	0.962124	0.000882

Positive Correlation at >90% Confidence Level

RRID	Facility	×	•	n	R	р	
214	Borgess (2	Sampling Sites)		11	0.552641	0.074707	

Positive Correlation at >80% Confidence Level

RRID	Facility	· · · · · · · · · · · · · · · · · · ·	n	R	р	
190	Kaiser (2 Sampling Sites)		4	0.895964	0.06495	
207	Lenoir		9	0.551837	0.118102	

Positive Correlation at Confidence Levels <80%

RRID	Facility	n	R	p
-208	Cape Fear	9	0.399071	0.282772
132	Cedars Sinai (2 Sampling Sites)	5	0.417155	0.471115
198	St. Bernardines	3	0.778409	0.340729
206	Stanford (2 Sampling Sites)	6	0.053518	0.918807
199	Sutter	3.	0.450886	0.663621
211	U. of Michigan (2 Sampling Sites)	6	0.320412	0.528754

Negative Correlation at >95% Confidence Level

RRID	Facility	· · ·		n	R	p
213	Morristown	(2 Sampling Sites)(with & witho	ut Hg rgnt)	12	0.870075	0.000165

Negative Correlation at Confidence Levels <80%

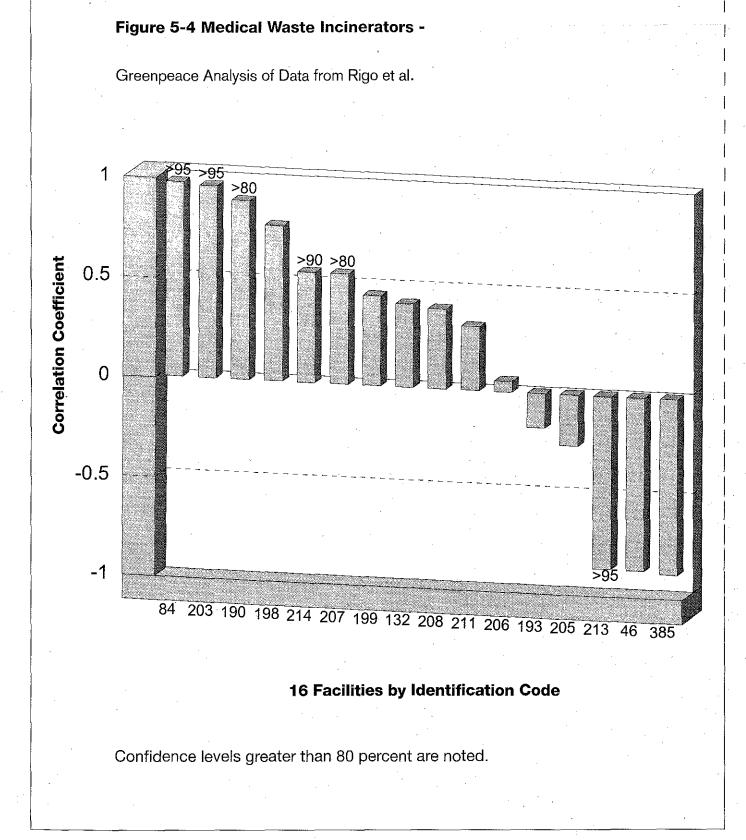
RRID	Facility	n n	R	p
385	Clean Harbors	3	-0.88543	0.197057
193	Huldovre	6	0.172904	0.739825
46	Rochester	· 3	0.872636	0.215877
205	USC Medical	3	0.255359	0.816416

Miscellaneous Facilities

RRID	Facility	n R	p
126	Jordan Hospital*		
123	Humber*		
197	St. Agnes**		

* The database contains no uncontrolled HCI data for this facility.

** This facility had only two datapoints, which are not sufficient for a valid linear regression.



6.0 Hazardous Waste Incinerators

Other than one Canadian facility, all hazardous waste incinerators for which locations were disclosed were at U.S.-based facilities. The data were obtained at most of these units between 1986 and 1994. However, test dates were not given in all cases.

6.1 Comparisons of Percent Chlorine in Feed and Dioxin Concentration in Stack Gases

For their assessment of hazardous waste incinerators, Rigo et al. evaluated the relationship of percent chlorine in feed to dioxin concentrations in stack gases^a. Based on statistical analyses of these data for each unit, they reached the following conclusions:

Rigo et al.: "A variable relationship was found; 18 of 28 [hazardous waste incineration] units with simultaneous PCDD/F and chlorine characterization information display no statistically significant relationship. Five facilities show an increase in PCDD/F concentrations with increased chlorine in the feed and five facilities show a decrease."

Rigo et al.: "The available data indicate that, depending on the plant [hazardous waste incinerator], changing chlorine concentration can have no observable effect (20 facilities); increase PCDD/F concentrations (4 facilities); or decrease PCDD/F concentrations (4 facilities)."²

These two conclusions, while moderately inconsistent, are not surprising, given the nature of the variables compared. Percent chlorine in feed is the quantity of chlorine in a given amount of feed. In itself, this measure reveals little about the rate at which chlorine is fed into an incinerator. The latter measure, chlorine feedrate, is obtained by multiplying percent chlorine in feed and waste feedrate. Similarly, the dioxin concentration in stack gas must be multiplied by the stack gas flowrate to determine the dioxin emission rate.

Comparison of these two measures — percent chlorine in feed and dioxin concentration in stack gas — is meaningful only when waste feedrates and stack gas flowrates are held constant. If waste feedrate increases, chlorine feedrate will also increase, even though the percent chlorine in feed may remain the same. Similarly, if stack gas flowrate increases, dioxin emissions increase even though dioxin concentration may not change.

Appendix C-3 of the ASME report contains both percent chlorine in feed and chlorine feedrates for many of the same hazardous waste incinerators. For the overwhelming majority of these units, chlorine feedrates were varied during emissions testing, sometimes by more than six-fold during a single test series.

No stack gas flowrates are given by Rigo et al. However, according to the trial burn report for one of the incinerators in the ASME database, stack gas flowrates fluctuated by +/- 17 percent in tests carried out at the same waste feedrate. During all six tests of this trial burn, both the waste feedrates and stack gas flowrates varied, in an unrelated fashion, by +/- 16 percent.³

a Unlike other combustor categories, all dioxin concentrations for hazardous waste incinerators were measured at the stack.

It is interesting to note that the conclusions presented by Rigo et al. are not supported by the raw data in Appendix C-3 of their report or by the statistical values presented in Appendix D-3. The raw data describe percent chlorine in feed and dioxin concentrations in gases for 26 hazardous waste incinerators^b, rather than the 28 cited in the conclusions. Of these 26 units, Rigo et al. present statistical values for 18 incinerators which are listed in Table 6-1 and illustrated in Figure 6-1. It is also interesting to compare Figure 6-1 with Figures 6-2 and 6-3, which are scatter plots of hazardous waste incinerator data taken from the ASME report.

Table 6-2 and Figure 6-4 present the results of the Greenpeace analysis of the 26 hazardous waste incinerators for which percent chlorine in feed and dioxin concentrations were given in Appendix C-3. With some notable exceptions, the resulting values corroborate the majority of those obtained by Rigo et al. as well as expand the number of facilities assessed.

6.2 Comparisons of Chlorine Feedrate and Dioxin Concentrations

As noted earlier, chlorine feedrates for some of the hazardous waste incinerators can also be found in the ASME database. The relationship of these feedrates with dioxin concentrations were evaluated using the same general procedure as that used by Rigo et al. in their comparisons of percent chlorine in feed and dioxin concentrations. As shown by the results, which are presented in Table 6-3 and illustrated in Figure 6-5, correlations between chlorine feedrate and dioxin concentrations in stack gases were positive at slightly more than half of the hazardous waste incinerators. The results of these analyses can be summarized as follows:

The ASME database contains both chlorine feedrate and dioxin concentrations in stack gases for 24 hazardous waste incinerators. Among 11 of these units, chlorine feedrates and dioxin concentrations exhibited statistically significant positive correlations as follows: three units, >95 percent confidence; three units, >80 percent; and five units, <80 percent. Negative correlations were shown at nine incinerators, reaching statistical significance at the following confidence levels: >95 percent confidence, two incinerators; and <80 percent confidence, seven units. No correlation was shown by data from four hazardous waste incinerators.

It should be noted that the relationship between chlorine input and dioxin concentrations cannot be accurately evaluated by using chlorine feedrate in the comparison unless stack gas flowrates are held constant. Otherwise, chlorine feedrate, which is normally expressed as mass per unit of time (e.g., kilograms per hour) must be compared to the dioxin emission rate, which is obtained when dioxin concentration is multiplied by stack gas flowrate.

Dioxin emission rates of the hazardous waste incinerators in the ASME study cannot be calculated, since stack gas flowrates are not presented in the database. As a consequence, the above conclusion can only be regarded as indicative, within the limits of the fluctuations of stack gas flowrates during each test series at each incinerator, of a predominantly positive relationship between chlorine feedrates and dioxin emission rates.

It must be pointed out again that these results were obtained by following the practice of Rigo et al. of aggregating data that were collected during two or more separate test series carried out at the same facility. The correlation coefficients of the aggregated data are, as expected, often quite different from the correlation coefficients of the data for each individual test series. This is illustrated in Figure 6-6 by comparing coefficients from aggregated data

^b Twenty-two of 26 hazardous waste incinerators are located in the U.S.; one, in Canada; and three, undisclosed. Ten of the U.S. facilities are listed by the U.S. Environmental Protection Agency as commercial hazardous waste incinerators, of which the Agency lists a total of 37. The remaining U.S.-based units evaluated by Rigo et al. include incinerators at Superfund sites and proprietary, on-site combustors owned and operated by particular industries for their own waste streams.

Table 6-1 Hazardous Waste Incinerators -

Statistical Data from Rigo et al.

(Note: Percent chlorine in feed, which was one of the variables used in calculating these values, is not a valid surrogate for chlorine feedrate, as discussed earlier. Consequently, these data are useless for assessing the relationship between chlorine input and dioxin emissions.)

Positive Correlation at >95% Confidence Level

RRID	Facility	n	R	р
220	Aptus, Utah	9	0.71318	0.0310
215	3M	8	0.90081	0.0023
263	*Occidental	10	0.73119	0.0163
271	Rollins, Baton Rouge	3	0.99955	0.0191

Positive Correlation at >80% Confidence Level

RRID	Facility		n	R	p i
227	CWM, Chicago	· · · · · ·	4	0.84229	0.1577

Positive Correlation at Confidence Levels <80%

RRID	Facility	. n	R	p
270	DOD, Rocky Mtn.	3	0.94941	0.2034
246	*Eastman-Kodak, NY	8	0.12276	0.7721
251	GE, Pittsfield	5	0.07828	0,9004
274	Ross, Ohio	 3	0.76966	0.4408

Negative Correlation at >95% Confidence Level

RRID	Facility	n	R	р
219	*Aptus, Kansas	14	-0.78443	0.0009
399	Confidential B	6	-0.82516	0.0432
388	*CWM, Texas	9	-0.66592	0.0502
283	*WTI, Ohio	22	-0.58711	0.0041

Negative Correlation at >80% Confidence Level

RRID	Facility		n .	R	р
273	*Rollins, Deer Park		5	-0.68146	0.2052

Negative Correlation at Confidence Levels <80%

RRID	Facility	n n	R	р
230	Chevron, Richmond	6	-0.3213	0.9518
231	*Ciba, Baton Rouge	3	-0.36347	0.7632
268	Pfizer	3	-0.86516	0.3344
282	Vulcan, KS	5	-0.13712	0.8260

Miscellaneous Facilities

RRID	Facility	······································	n.	R	р
224	BROS Lagoon**	· · · · · · · · · · · · · · · · · · ·			
398	Confidential A**			·.	
400	Confidential C**				
396	Dow, Canada A**	· .:			
238	Dow, Midland**				I.
23 9	Dow, Plaquemine***				
252	GE, Waterford**				1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -
382	New Bedford**				
389	Waste Tech, LA**				

* Data were collected during two or more tests that were conducted at different times and aggregated for analysis.

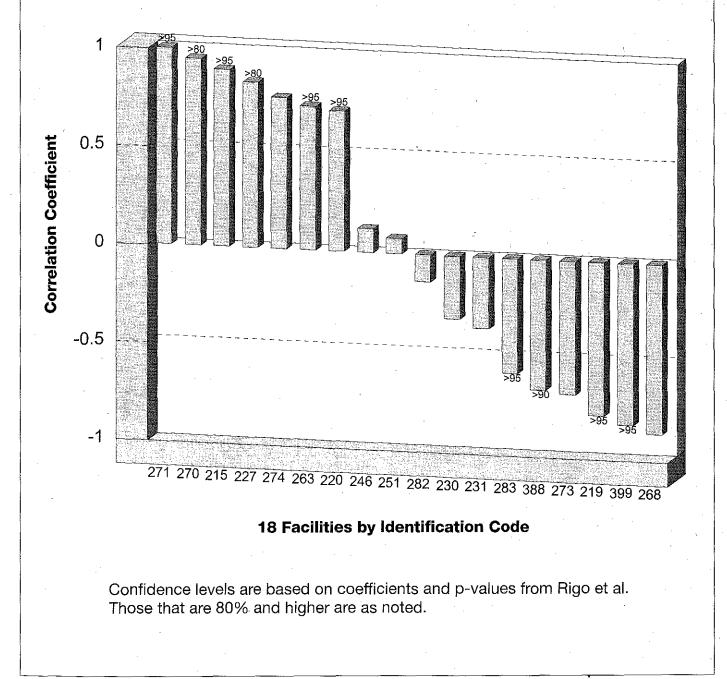
** No linear regression is presented for this facility.

*** The database contains no data describing percent chlorine in feed for these facilities.

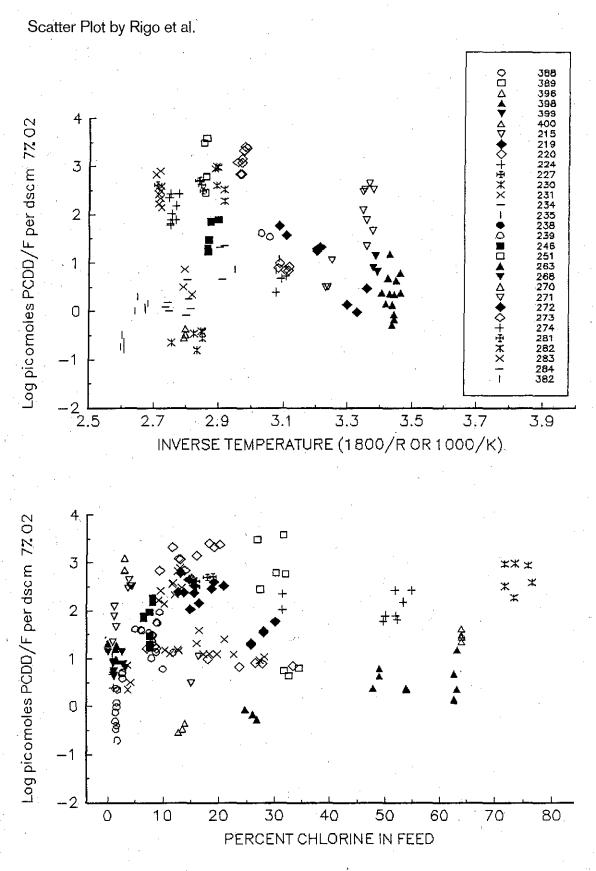
Figure 6-1 Hazardous Waste Incinerators -

Correlation of Percent Chlorine in Feed and Dioxin Emissions, as Calculated by Rigo et al.

Note: The data in this graph are not useful for assessing the relationship between chlorine input and dioxin emissions.





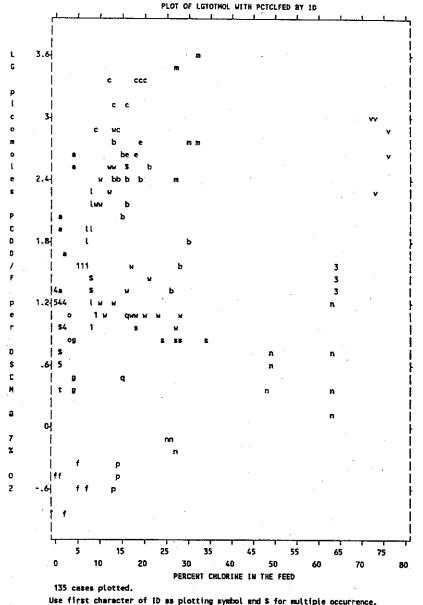


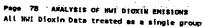
Scatter plot showing the lack of relationship between moles of PCDD/F and either temperature or percent chlorine feed of HWI.

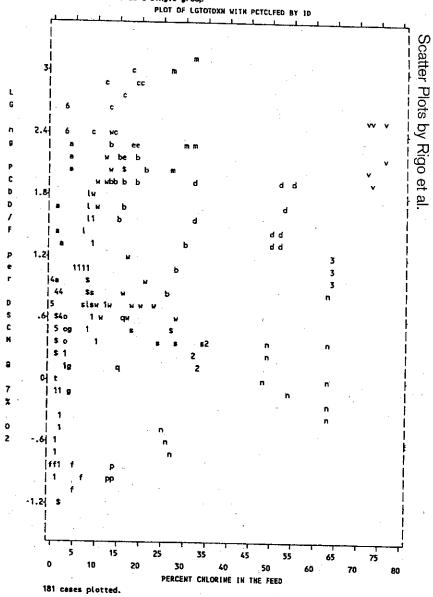
THE BURNING QUESTION: CHLORINE & DIOXIN

Page 77 ANALYSIS OF HWI DIOXIN EMISSIONS

All HVI Dioxin Data treated as a single group







Use first character of ID as plotting symbol and \$ for multiple occurrence.

THE BURNING QUESTION: CHLORINE & DIOXIN

Table 6-2 Hazardous Waste Incinerators -

Reanalysis of Percent Chlorine in Feed vs PCDD/Fs

Positive Correlation at >95% Confidence Level

RRID	Facility	n	Ŗ	p `
220	Aptus, Utah	9	0.714934	0.026852
388	*CWM, Texas (1990, 1992, 1992, & 1994 Tests)	26	0.801854	6.9E-07
215	3M	8	0.905036	0.001236
263	*Occidental (1986 & 1987 Tests)	13	0.641864	0.016769
271	Rollins, Baton Rouge	3	0.9976609	0.004766

Positive Correlation at >80% Confidence Level

RRID	Facility	n n	R	ρ
227	CWM, Chicago	4	0.825204	0.130728

Positive Correlation at Confidence Levels <80%

RRID	Facility	n	R	p
238	Dow Midland	4	0.473916	0.501946
246	*Eastman-Kodak, NY (1986 and 1992 Tests)	8	0.090549	0.830118
251	GE, Pittsfield	5	0.058321	0.924271
382	New Bedford	- 3	0.44227	0.670754
389	Waste Tech., LA	3	0.418208	0.690437

Negative Correlation at >95% Confidence Level

RRID	Facility	n	R	p
219	*Aptus, Kansas (1986 & 1990 Tests)	18	-0.797293	6.1E-05
399	Confidential B	6	-0.844738	0,025185
273	*Rollins, Deer Park (1987 & 1988 Tests)	8	-0.945824	0.000188
283	*WTI, Ohio (2 Test Series)	22	-0.581595	0.00433

Negative Correlation at >80% Confidence Level

RRID	Facility	<u>n</u> .	R	p	
231	*Ciba, Baton Rouge (1988 & 1993 Tests)	6	-0.695238	0.11085	

Negative Correlation at Confidence Levels <80%

RRID	Facility		n	R	р
224	BROS Lagoon		9	-0.97784	0.801462
230	Chevron, Richmond		6	-0.09995	0.848688
398	Confidential A		5	-0.58294	0.281863
252	*GE Waterford (2 Test Series)	,	6	-0.609542	0.184712
268	Pfizer		3	-0.905326	0.166715
282	Vulcan, KS		6	-0.05324	0.919227

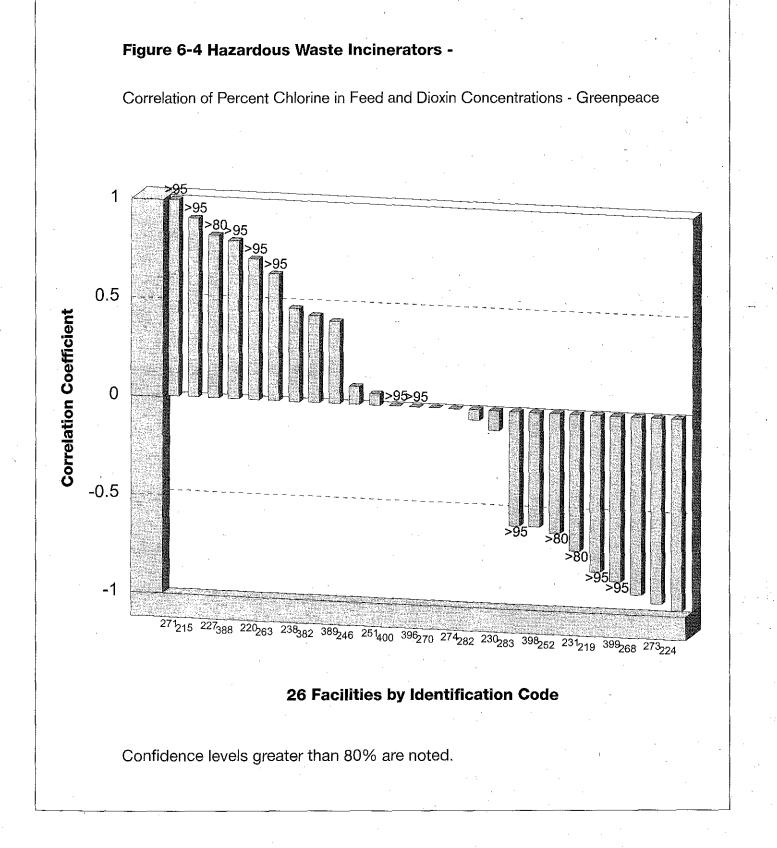
Facilities With Zero Correlation

RRID	Facility	п	R	р
400	Confidential C (% chlorine is constant; dioxins vary)	3	0	0.002171
270	DOD, Rocky Mtn. (% chlorine varies; dioxins are constant)	3	0	
396	Dow, Canada A (% chlorine is constant; dioxins vary)	4	0	2E-06
274	Ross, Ohlo (% chlorine is constant; dioxins vary)	3	0	0.299378

No Simultaneous Measures of Percent Chlorine and Dioxins

RRID	Facility		n	R	 р	
239	Dow, Plaquemine					

* Data were collected during two or more tests that were conducted at different times, as noted, and aggregated for analysis, following the practice of Rigo et al.



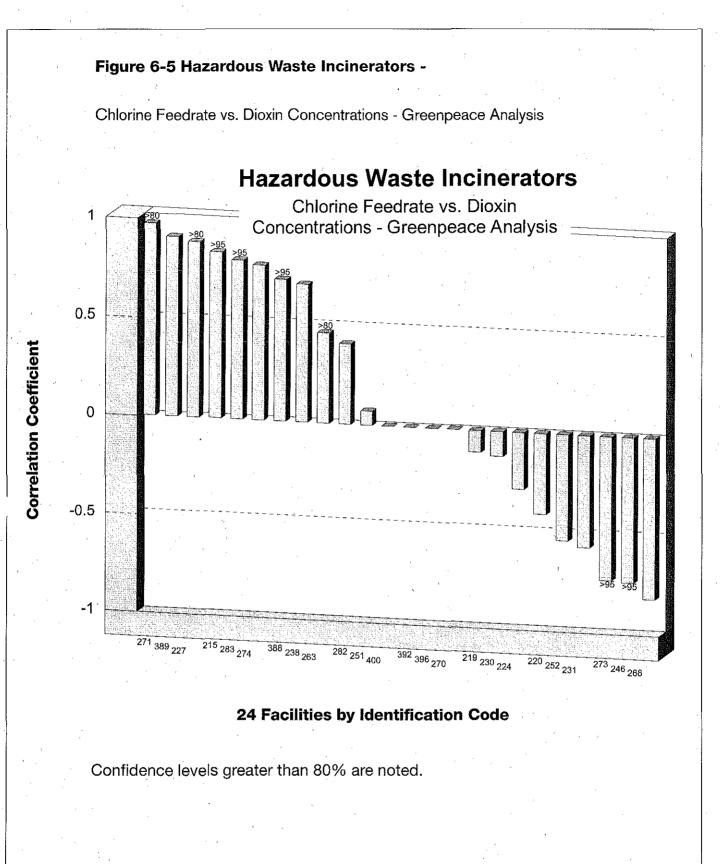


Table 6-3 Hazardous Waste Incinerators -

Chlorine Feedrate vs. Dioxin Concentration in Stack Emissions, Raw Data from Rigo et al.

Positive Correlation at >95% Confidence Level

RRID	Facility	n	R	p
388	*CWM, Texas (1990, 1992, 1992, 1994)	26	0.72026	3E-05
215	3M	8	0.841397	0.006596
283	*WTI, Ohio (2 Test Periods)	22	0.805939	4.8E-06

Positive Correlation at >80% Confidence Level

RRID	Facility	n	R	р
227	CWM - Chicago	4	0.890719	0.069498
263	*Occidental (1986 & 1987)	13	0.457497	0.113657
271	Rollins, Baton Rouge	3	0.971409	0.054862

Positive Correlation at <80% Confidence Level

RRID	Facility		n	R	p	
238	Dow Midland		4	0.700321	0.259405	
251	GE - Pittsfield		5	0.072897	0.905367	
274	Ross	· · · ·	3	0.785959	0.331496	
282	Vulcan		6 .	0.407514	0.413014	
389	Waste Tech		З	0.910654	0.158355	

Negative Correlation at >95% Confidence Level

RRID	Facility	' n	R	р
246	*Eastman (1986 & 1992)	8	-0.741909	0.030183
273	*Rollins, Deer Park (1987 & 1988)	. 8	-0.73496	0.032711

Negative Correlation at <80% Confidence Level

RRID	Facility	n	R	p .
219	*Aptus, KS (1986 & 1990)	18	-0.110946	0.660843 '
220	Aptus, UT	· 9	-0.411031	0.26708
224	Bros Lagoon	. 9	-0.28777	0.449556
230	Chevron	6	-0.126055	0.80951
231	*Ciba (1988 & 1993)	6	-0,571932	0.221973
252	*GE - Waterford (1991 & 1992)	6	-0.541819	0.253718
268	Pfizer	3	-0.821056	0.286945

Facilities With Zero Correlation

RRID	Facility	'n	R	
400	Confidential C	3	7.7E-15	0.002171
270	DOD	3	ERR	0.53241
396	Dow Canada A	4	0	0.000743
392	New Bedford	3	5E-16	0.051768

Facilities With No Chlorine Feedrate Data

RRID	Facility	-	n	R	р	
398	Confidential A - No CI Feedrate					•
399	Confidential B - No CI Feedrate		*			

* Data were collected from these facilities during two or more tests that were conducted at different times, as noted, and aggregated for analysis, following the practice of Rigo et al.

(denoted by the facility identification numbers, 219, 231 and 246) with those of the individual test series (e.g., 219-86 and 219-90). The disparities shown in this figure attest to the errors that can be introduced by aggregation of data in this way.

Figure 6-7 allows a comparison of Rigo et al.'s correlation coefficients for percent chlorine in feed and dioxin concentration with the correlation coefficients for chlorine feedrate and dioxin concentration for all of those hazardous waste incinerators for which the ASME database contained such data. The results are, as expected, often strikingly different. This further emphasizes the unsuitability of percent chlorine in feed as a surrogate for chlorine feedrate.

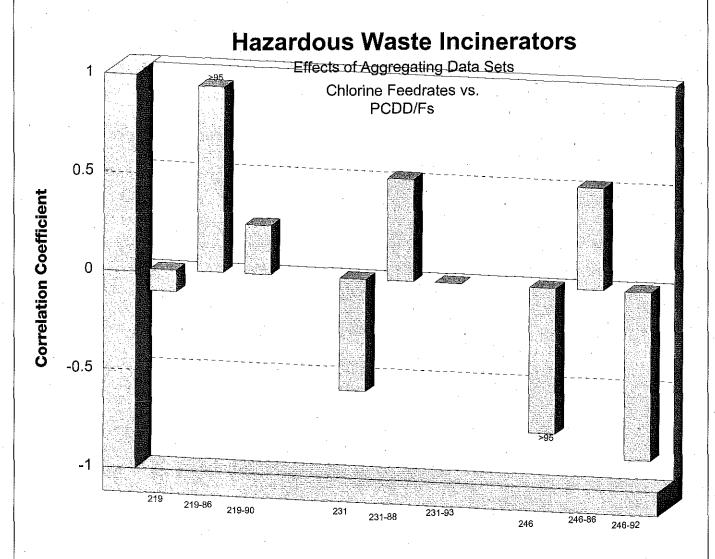
In summary, the statistical analyses carried out by Rigo et al. on percent chlorine in feed and dioxin concentrations in stack gases of hazardous waste incinerators are inappropriate for assessment of the relationship between chlorine input and dioxin emissions from hazardous waste incinerators. Greenpeace analyses of chlorine feedrates and dioxin concentrations in stack gases show a slight predominance of positive correlations. This finding suggests, in turn, that there may be a slight predominance of positive correlations between chlorine feedrate and rates of dioxin emissions, which cannot be confirmed in the absence of stack gas flowrates.

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Figure 6-6 Hazardous Waste Incinerators -

Effects of Aggregating Data Sets. Chlorine Feedrates vs. PCDD/Fs



Three HWIs by Identification Code

Confidence levels greater than 80% are noted.

7.0 Boilers and Industrial Furnaces

Rigo et al. compared percent chlorine in feed, rather than chlorine feedrate, to dioxin concentrations in gas streams in their assessment of boilers and industrial furnaces. Rather than facility-specific statistical analyses, they prepared an aggregate scatter plot of percent chlorine in feed versus dioxin concentrations for these combustors, which apparently served as the basis for the following contradictory conclusions:¹

Rigo et al.: "There is too little hazardous waste fired boiler data to reach firm conclusions."

Rigo et al.: "Chlorine feed concentration is inversely related to PCDD/F concentrations at the stack for this very limited data set."

Although Rigo et al. noted that their "database includes PCDD/F data for five boilers,"² they did not make clear the fact that only three of these units have both dioxin and chlorine-related measures.³ Percent chlorine in feed data are provided for all three units. However, at each unit, all dioxin concentrations were measured at the same percent chlorine in feed. This can also be seen in the scatter plot prepared by Rigo et al.⁴

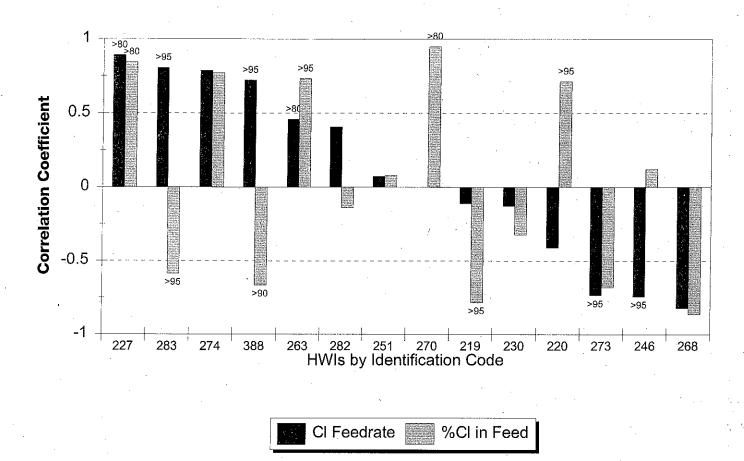
With no variation in percent chlorine in feed, it is impossible to determine whether or not dioxin concentrations change when percent chlorine in feed changes, even if such a comparison were valid. (As discussed earlier, percent chlorine in feed is a valid surrogate for chlorine feedrate only when considering an individual combustor for which both the waste feedrate and stack gas flowrates are held constant.)

Chlorine feedrate data are also provided for one unit. However, the feedrate was held constant for all dioxin determinations. Consequently, these data cannot be used for determining the relationship of chlorine input and dioxin concentrations in stack gases.

In summary, the data in the ASME report are not useful for evaluating the relationship between chlorine input to boilers and industrial furnaces and dioxin concentrations in stack gases.

Figure 6-7 Hazardous Waste Incinerators -

Comparison of Correlation Coefficients for Chlorine Feedrate vs. PCDD/Fs and Percent Chlorine in Feed vs. PCDD/Fs



Confidence levels greater than 80% are noted.

Table 8-1 Cement Kilns

Chlorine Feedrate vs. Dioxin Concentrations

in Gas Streams, Raw Data from Rigo et al.

Positive Correlation at >95% Confidence Level

RRID	Facility	n	R	р
316	*Chanute (Unit 1) (1992, 1993 & 1994)	15	0.707855	0.002824
47	Holly Hill (Unit 1)	6	0.95665	0.001226
47	Holly Hill (Unit 2)	5	0.991629	0.000185

Positive Correlation at >80% Confidence Level

RRID	Facility	·	n	R	р.
200	*Freedonia (Unit 1) (1992 & 1993)		11	0.495825	0.117518
312	Knoxville		6	0.655411	0.143161

Positive Correlation at <80% Confidence Level

RRID	Facility	n	R	р
201	Alpina (Unit 5)	3	0.737013	0.389377
294	Bath (Unit 2)	3	0.282297	0.796286
311	Fairborn (Unit 1) (All Sampling Sites)	. 9	0.08463	0.793218
62	Foreman (Unit 2)	6	0.437149	0.375646
200	Fredonia (Unit 2) (1993)	3	0.115437	0,918101
313	Kosmosdale	3	0.85032	0.247521
64	Logansport	4	0.216318	0.774545
317	Louisville (Unit 1)	5	0.391289	0,502313
317	Louisville (Unit 2)	-4	0.687096	0.273453

Negative Correlation at >80% Confidence Level

RRID	Facility	· · · · · · · · · · · · · · · · · · ·	'n	R	p
293	Artesia	· · · · · ·	3.	-0,953992	0.086199
302	Essroc (All Sampling Sites)		9	-0.53949	0.12848

Negative Correlation at <80% Confidence Level

RRID	Facility	n	R	р
294	Bath (Unit 1)	3	-0.806321	0.305989
316	*Chanute (Unit 2) (1992 & 1994)	14	-0.088857	0.762193
49	Clarksville	6	-0.497279	0.303534
62	Foreman (Unit 1)	4	-0.612941	0.352777
62	Foreman (Unit 3)	З	-0.67011	0.46192
304	Wampum (Unit 3)	5	-0.331552	0.5756
304	Wampum (Unit 12)	3	-0.752886	0.371101

* Data were collected at two or more tests, as noted, and, following the practice of Rigo et al., these data were aggregated for analysis

8.0 Cement Kilns

All of the facilities are located in the U.S. and their emission data were obtained during the period of 1992-1994. According to the ASME database, most of these cement kilns were burning both hazardous waste and commercial solid waste during testing, while at least one was co-firing municipal solid waste. It is not clear that the chlorine content of these co-fired materials were reflected in the data describing chlorine feedrate and percent chlorine in feed.

8.1 Analysis by Rigo et al.

Rigo et al. do not present facility-specific or combustor-specific statistical analyses for the cement kilns in their study, all of which were sited in the U.S. Instead, they offer a scatter plot of the aggregated data from the kilns, showing dioxin concentrations at chlorine feedrates normalized to daily clinker outputs. The aggregate scatter plot lists 20 facilities, several of which have multiple kilns.¹ However, their database contains no chlorine feedrate data for the kilns at six of the 20 facilities included in the plot.

Since no clinker output data are included in their report, the following conclusion cannot be corroborated: ²

Rigo et al.: "Cement kiln chlorine feed rate has no discernible influence on the nature or quantity of PCDD/F emitted from the stacks of these facilities."

8.2 Greenpeace Analysis of Raw Data from Rigo et al.

Statistical analyses of the chlorine feedrates and related dioxin concentrations given in Appendix C-5 of the ASME report show that increasing chlorine feedrates were accompanied by increasing dioxin concentrations at 14 of 23 cement kilns, as listed in Table 8-1 and illustrated in Figure 8-1. The conclusion that can be drawn from these analyses is as follows:

Fourteen of 23 cement kilns exhibited positive correlations between chlorine feedrate and dioxin concentrations in gas streams. At three kilns, this positive relationship was statistically significant with >95 percent confidence; at two, >80 percent confidence; and, at the remaining nine, <80 percent confidence. Of the nine kilns that evidenced negative correlations, two showed statistical significant at >80 percent confidence levels while the remaining seven had confidence levels of <80 percent.

As discussed earlier, these comparisons of chlorine feedrates and dioxin concentrations in gas streams are useful for evaluating the relationship of chlorine feedrates and dioxin emission rates only to the extent that stack gas flowrates were held constant during individual test series at the individual kilns. In the absence of substantiating flowrate data, they can only be regarded as suggestive.

In summary, due to insufficient data, the conclusion presented by Rigo et al. on the relationship between chlorine feedrates normalized to daily clinker output and dioxin concentrations in gas streams from cement kilns cannot be corroborated. However, statistical analyses of chlorine feedrates and dioxin concentrations taken from the ASME database show that dioxin concentrations increased with increasing chlorine feedrates at 60 percent of the cement kilns evaluated. This suggests that increases in chlorine feedrates were generally accompanied by increased dioxin emission rates.

9.0 Biomass Combustors

Rigo et al. list nine biomass combustors in Table 5.3-1 of their report.¹ However, their database includes eight units; five of these are accompanied by data describing dioxin concentrations and one or more of the following chlorine-related measures: HCI emissions, percent chlorine in feed and chlorine feedrate.² Although not listed as such in the database, one of the five (RRID 144) is apparently a facility with two combustors.³

These five biomass combustion facilities are located as follows: Canada, two; United Kingdom, one facility with two combustors; Netherlands, one; and United States, one. For their emissions data, the time of origin ranged from 1987 to 1994, with no date given for one facility.

Rigo et al. do not present facility-specific or combustor-specific statistical analyses for the biomass combustors. Instead, they provide two scatter plots: one with dioxin concentrations versus percent chlorine in feed for three facilities with one combustor each, and one with dioxin concentrations versus uncontrolled HCl concentrations for three facilities with a total of five combustors. These two aggregate scatter plots led to two contradictory conclusions:⁴

Rigo et al.: "Given the variation in PCDD/F concentrations over the range of chlorine feed concentrations and stack HCl concentrations, there is too little data to draw any definitive conclusions."

Rigo et al: "There does not appear to be any relationship between chlorine in the waste fed to biomass fired furnaces and PCDD/F concentrations."

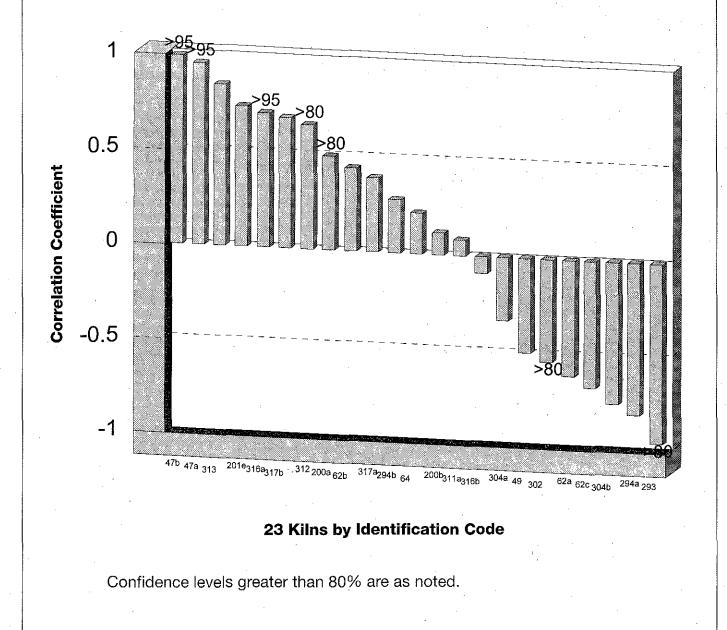
As described earlier, the comparison of percent chlorine in feed with dioxin concentration in stack gas is meaningful only under certain circumstances — constant feedrate and stack flowrate. As a consequence, little if anything can be concluded about the relationship between chlorine input and dioxin emissions at the three biomass combustors for which Rigo et al. used percent chlorine in feed as a surrogate for chlorine input.

Rigo et al. used HCl concentration as a surrogate for chlorine input for two biomass combustion facilities having a total of five individual combustors. However, for each of these combustors, there were insufficient data in the ASME report's database for determining the relationship between HCl and dioxin concentrations: four of the combustors had only one data pair — one HCl value associated with one dioxin value — and the fifth unit had only two data pairs.

In summary, the data presented by Rigo et al. are insufficient to allow evaluation of the relationship between chlorine input and dioxin emissions from biomass combustors.

Figure 8-1 Cement Kilns

Relationship of Chlorine Feedrate and Dioxin Concentrations. Greenpeace Analysis of Data from ASME Database



MWI [medical waste incinerator] facilities without acid gas control equipment if all the chlorine in the waste is converted to HCl or Cl2 and not tied-up in the residue." ⁴

This assumption is not, however, supported by other studies. For example, in developing a method to estimate the HCI emission potential of wastes destined for incineration, the United States Environmental Protection Agency (USEPA) found HCI formation to depend strongly on the chemical form of the chlorine. While organically-bound chlorine was *"essentially completely converted to HCI,"* conversion of inorganic chlorides, such as sodium chloride, proceeded considerably less efficiently (e.g., 30 to 50 percent conversion), varying according to other factors, such as moisture content.⁵

Researchers for the United States Department of Energy found that *"measured offgas HCI concentrations ranged from 63% to 1% of the theoretical HCI emissions."* They postulated that the remaining chlorine that was not emitted as HCI went into the formation of chlorinated metal compounds.⁶

In their recent study, Kanters et al. (1996) found a substantial fraction of chlorine sequestered in ash and conversion of chlorine to HCl that was non-stoichiometric, varying, in the case of sodium chloride, with incinerator operating conditions, as follows:⁷

"Origin of Hydrochloric Acid. Organic and inorganic chloride are equally abundant in regular MSW, and the HCI emission versus chloride remaining in the ash was found to be about 80/20. Ashes are usually alkaline in nature and therefore are capable of retaining the HCI through salt formation. However, at least a part of the original inorganic chloride is emitted as HCI. ... in the most realistic experiment, with the addition of aqueous NaCl to compostables and using humidified air, a HCI emission of 50-60% of the NaCl intake was observed; ca. 25% of the CI remained in the ash. The remainder has probably been deposited on the wall. ... The degree of conversion of NaCl to HCI varies with the operating conditions and the design of the incinerator."

Sonnenberg and Nichols (1995) found, in tests at a full-scale incinerator burning bleach plant solids from a kraft pulp mill, that only 5 percent of total chlorine in the waste was emitted as HCI. This was regarded as consistent with earlier studies showing that most organic chlorine is trapped as sodium chloride when the materials burned contain a molar excess of sodium over chlorine.⁸

In summary, during high temperature combustion, the conversion of both organic chlorine and inorganic chlorine into HCI varies with the design and operating conditions of the combustor and waste feed characteristics. In general, conversion of organic chlorine seems to be more efficient and less variable than that of inorganic chlorine. As a consequence, HCI concentrations in stack gases are not reliable surrogates for chlorine feedrates in statistical evaluations of full-scale combustors.

10.3 Accuracy and Precision of Hydrogen Chloride Measurements

In addition to the limitations of HCI as an indicator of waste chlorine content, HCI analyses also suffer from a notable lack of precision. Even in a closely controlled study carried out on the same combustor, using the same sampling and analytical procedures, HCI measurements exhibited a standard deviation of +/- 28 percent.⁹

There is no internationally accepted protocol for HCl sampling and analysis. Indeed, most countries have no national protocols. For instance, in the absence of a national protocol, USEPA has issued recommendations advising those carrying out HCl sampling and analysis to avoid using certain resin traps to collect samples for HCl analysis due to potential

10.0 Hydrogen Chloride Concentrations in Stack Gases as Indicators of Chlorine Input

For their evaluation of the relationship of chlorine input and dioxin emissions from municipal waste combustors and medical waste incinerators, Rigo et al. compared hydrogen chloride (HCI) concentrations in stack gases and dioxin concentrations measured at the stack and other locations. As discussed below, HCI concentrations in stack gases of full-scale combustors are not reliable indicators of chlorine input. Moreover, the methods used for sampling and analysis of HCI in combustor gases are subject to considerable imprecision and bias.

Municipal and medical wastes are quite heterogeneous so that chlorine content can vary widely within a relatively brief period. Likewise, both waste feedrates and, consequently, chlorine feedrates as well as stack gas flowrates also can fluctuate over wide ranges. As a result, to ensure their comparability, stack gases samples for HCl and dioxin analyses must be collected over the same period of time.

10.1 Non-Synchronicity of HCI and Dioxin Data

At several points in their report, Rigo et al. describe their HCl and dioxin data as being simultaneous. However, based on their description of sampling procedures, these data were not actually collected over the same time period:¹

Rigo et al.: "The uncontrolled HCl data comes from a single 1 hour test conducted during the 6 hour PCDD/F sampling period. This is typical of much of the available data since the sampling times for HCl and PCDD/F determinations are different."

In some cases, the dioxin sampling period may exceed the four to six hour period required by many methods. For example, according to Funcke et al. (1993), the duration of stack sampling for dioxins *"has to be between 6 to 16 hours."*²

Since gas flowrates at the stack differ considerably from those at sampling points upstream in a combustion system, direct comparisons of HCl concentrations at the stack with dioxin concentrations taken at other points will necessarily lead to erroneous conclusions. Neither the necessary flowrate data nor acknowledgment of this issue are given in the ASME report.

10.2 Conversion of Chlorine in Wastes to Hydrogen Chloride Emissions

Rigo et al. used HCI concentration in stack gases as a surrogate for chlorine input based on the assumption that essentially 100 percent of all forms of chlorine in combusted materials is converted into HCI and deposition in ashes is insignificant:

Rigo et al.: "... the input chlorine level is usually inferred from uncontrolled flue gas HCl concentration data on the assumption that little chlorine is tied up by the ash. Some limited North American studies containing both HCl data and MSW [municipal solid waste] chlorine content verify the reasonableness of the stoichiometric release assumption"³

Rigo et al.: "The HCI data provide a direct indication of the waste feed chlorine content for

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11.0 Quality and Comparability of Dioxin Data

Some of the data relied on by Rigo et al. originated as long ago as 1983, while others were collected as recently as 1994. During this period of time, there were marked improvements in the methods used for sampling and analyzing dioxins in combustor gases.

In 1984, the USEPA method was directed toward only one of the dioxins - 2,3,7,8tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) - and had a detection limit of 1 to 5 micrograms per cubic meter with a stack gas sample of 5 cubic meters.¹ With the methods used today, all dioxins are measured in stack gases and reported (expressed as equivalents of 2,3,7,8-TCDD) at concentrations more than a thousand times lower.

As existing methods of sampling and analysis were modified and new methods developed during 1983-1994, the quality of the dioxin data obtained also changed. As a consequence, the dioxin data evaluated by Rigo et al. are quite diverse in quality.

While Rigo et al. rather subtly acknowledge that methods of sampling and analysis have changed over time, they do not address the impacts of such changes on the quality and, thus, the comparability of the data in the ASME database. They do, however, discount differences in sampling and analysis methods that are more geographic in nature, as follows:²

Rigo et al.: "The data used in this project came from around the world. While North American sampling and analytical methods at any point in time are essentially the same, European techniques are slightly different. These data have been included, however, in this study because several researchers have compared the various methods and showed little difference in total concentrations ..."

This assessment by Rigo et al. contrasts rather starkly with the findings of other scientists. In their review, Liem and van Zorge (1995) reported that there are still no validated European standards for sampling and measuring dioxins in exhaust gases from stationary sources, pointing out the uncertainty of dioxin values and their limited comparability as follows:³

"Several interlaboratory comparison studies have shown that analytical results may differ substantially (e.g., WHO, 1989 and 1991). ... Therefore, it should be taken into account that the numerous data used to estimate dioxin emissions ... are only of limited comparability. ... The analytical uncertainty will influence largely the comparisons between the estimated dioxin emissions for the several countries."

Johnke and Stelzner (1992) have identified several factors that limit the comparability of data from German municipal waste combustors. As shown below, these factors are equally germane to the study by Rigo et al:⁴

"The measurements were carried out from 1985 to 1990. ... The comparability of the measurement data was a question that arose especial [sic] in the overall evaluation of the measurement programme, since the sampling equipment and analytical methods used for the measurements differed. This was due to the following reasons:

• The great length of time over which the programme extended, during which numerous improvements to the measurement technology were made.

contamination of the resin and/or retention of HCI on the resin.¹⁰

In a recent USEPA-sponsored survey of methods of sampling and analyzing for HCI, Johnston (1996) described in detail the vulnerabilities and problems encountered with two USEPA methods as well as two proposed methods. For example, two methods were confirmed to have a variable, negative bias at low concentrations, which seemed to correlate better with gas stream moisture content than with HCI concentration. The presence of alkaline particulate matter in gas streams was also identified as a source of negative bias, which varied with the composition of the particulates. A positive bias was noted when ammonium chloride was present in stack gases.¹¹

In simultaneous tests of a USEPA method and a confirmed instrumental method for monitoring HCI emissions from cement, the USEPA method produced results that *"ranged from being low by a factor of 2 to extremely low by a factor of 30."* Laboratory spiking studies with this method found it to yield results that were low by factors of three to five.¹²

The imprecise nature of HCI measurements are well illustrated by the ASME report itself. For example, while burning *"normal solid waste feed"* in the Horsholm incinerator, with no extra chlorine input and no sulfur dioxide reagent, the highest HCl concentration was 1.5 times greater than the lowest measure. With no extra chlorine and addition of a sulfur dioxide reagent at a constant rate, HCl concentrations varied by as much as tenfold.¹³ At the Sioux Center municipal waste incinerator, HCl concentrations varied from 71.7 to 240.8 ppm while wastes that were reported as containing zero percent chlorine were burned.¹⁴

In their discussion of cement kilns, Rigo et al. found that, in simultaneous analyses, USEPA Method 26 indicated HCl concentrations of 35-40 ppm(while a FTIR** analyzer reported no HCl. This led the authors of the ASME report to conclude as follows:¹⁵

Rigo et al.: "Hence, reported HCl concentrations are suspect."

In summary, the methods used for sampling and analysis of HCl in stack gases of full-scale combustors do not have the accuracy and precision sufficient to yield meaningful results in statistical evaluations such as those carried out by Rigo et al.

Comparing sample collection with analysis, they concluded, *"Much larger errors can be made during the sample collection in the stacks of incinerators.*"¹² Funcke et al. (1992) warned that *"…possible non-homogeneities in the flue gas channel have to be taken into consideration"* in a comparison of different sampling methods used in Germany.¹³

Other very important, but seldom-reported issues affecting data quality are deviations from the approved procedures during the application of stack sampling and analysis methods. In 1995, U.K. reviewers reported that departures from written protocols and accepted practices are common:¹⁴

"... [F]ew UK sampling teams claim to follow Method 23 in detail. ... [I]t has become clear that much UK sampling work has been carried out without the analysis of blank samples, with incompletely cleaned apparatus and with unsuitable sampling positions leading to the use of flexible hoses which have been shown to retain significant quantities of TOMPS [toxic organic micropollutants, including dioxin]."

In their evaluation of two Swedish stack sampling methods, Fangmark et al. (1990) observed, "It is not unusual to accept a lower degree of precision during sampling compared to the analytical precision, though weaknesses in sampling methodology and sampling strategy could spoil the relevance of many results."¹⁵

11.2 Limitations of USEPA Method 23

USEPA Method 23 has gained favor in many countries. For example, this method has been described as "the favoured approach in the UK because of the commercial availability of the apparatus, the versatility of the equipment for measuring other pollutants such as heavy metals or particles and the lack of customer acceptance of other methods."¹⁶

Wide acceptance notwithstanding, Method 23 has numerous shortcomings. Some are less serious, external issues that can be resolved by external measures. For example, the complexity of the sampling train makes it difficult to assemble and to operate correctly, leading operating personnel to deviate from approved procedures.¹⁷

Others, such as those that are intrinsic to the method, are less easily resolved. When USEPA scientists assessed the predecessor to Method 23, Modified Method 5 (MM5), they measured the recovery of dioxin congeners that were introduced through both static and dynamic spiking. For dynamic spiking, isotopic dioxin congeners were injected into the front end of a sampling train while combustor stack gases were sampled.¹⁶

With a lab-scale combustor, MM5 had recoveries of dynamically spiked congeners ranging from 50 to 99 percent. However, at the full-scale incinerator, *"recovery of the dynamic spikes had an overall average of 21% and were moderately variable."*

During this same study, USEPA also pursued methods for improving spike recoveries and, thus, the overall accuracy and precision of the method. For example, the overall recovery of dynamically spiked isotopic dioxin congeners was increased to 26 percent by extracting sample filters with benzene rather than the dichloromethane specified in the method.

Considerably greater improvements were noted when the back-half glassware of the MM5 sampling train was coated with a thin layer of a special grease. At the full-scale incinerator, rinsing the coated back-half glassware with toluene resulted in recoveries ranging from 62.9 to 107 percent, although precision was relatively poor.

When USEPA officially replaced MM5 with Method 23 in 1991, the Agency did not incorporate the changes that had led to markedly higher recoveries during dynamic spiking, albeit with poor precision.¹⁹ Since the only substantive difference between MM5 and Method 23

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• The large number of measurement institutes and analytical laboratories participating. ... The uncertainties resulting from the use of differing sampling equipment and analytical methods cannot be assessed precisely. ... A sensible approach therefore seems to be to carry out an evaluation that takes all measurement data into account in a differentiated manner."

Recent studies in the U.K. have found a margin of error of 50 percent for dioxin emission data.⁶ However, authors of an ECETOC technical report remarked that, in sampling and analysis of combustor gases for dioxins, "...the results from different laboratories may differ by as much as one order of magnitude, particularly at low levels." They also described a report by Marklund (1990) of parallel sampling by five different sampling techniques and analyses by two different laboratories in which dioxin concentrations differed by as much as 2.7 times for different sampling procedures and 1.8 times for the same procedure.⁶

In their comparative study of five different techniques for sampling flue gases for dioxins, Marklund et al. (1992) found as follows:⁷

"Most countries have their own sampling methods and sampling protocols for PCDDs and PCDFs in flue gases, and most also have their own analytical procedures. ... Comparable results were obtained with all sampling procedures when the results were NOT compensated for incomplete sampling recoveries and the recoveries for the pre-sampling spikes were highly erratic." [Emphasis in original]

Rigo et al. recognized the relatively high margin of error of contemporary data as follows: *

Rigo et al.: "TNO (1994) reports that the total PCDD/F [dioxin] concentration uncertainty is +/- 30% for raw data. Extending the analysis to include the effect of diluent correction (Hamil and Thomas, 1976)-raises the uncertainty to +/- 35%."

Nonetheless, in their conclusions, Rigo et al. made no mention of the severity of the limitations imposed on comparisons of data having margins of error as large as those encountered in their database.

11.1 Factors Affecting Data Quality

In a particularly interesting finding, the European Standards body CEN reported that agreement between methods depends strongly on the type of combustor tested. Where dioxins occurred primarily in the gas phase, different methods showed generally good agreement. In contrast, results differed by three orders of magnitude when the majority of the dioxins were bound to particles.⁹ In other words, the distribution of dioxins between the gas phase and particles is an important factor in both the accuracy and the variability of data.

The difficulties presented in quantifying particle-bound dioxins are illustrated by the study by Fangmark (1990) in which the polyurethane foam plugs used in some methods were shown to have poor capture of small particulates (< 2 microns). Fangmark (1990) noted as follows: ¹⁰

"The small particle fraction must therefore be included in the flue gas sample in order to obtain true values and not underestimate the concentrations of PCDDs and PCDFs."

Similarly, Hunsinger et al. (1996) found that other filter materials that are also used in some methods had a great influence on the dioxin concentrations obtained: "... at high temperatures (240° C) PCDD/F concentrations were found to be much smaller for the quartz filter compared to the PTFE filter."¹¹

Commenting on the difficulties of sampling combustor stacks, Janssens et al. (1992) noted "...the possibility of serious artifacts occurring in situ during the sampling of the hot effluent."

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Takeshita et al. (1995) recently identified three "controversial problems in the application of XAD-2 resin as an adsorbent for the sampling of PCDD/F in flue gas" in USEPA Method 23:20

- "One of the most important problems is the efficiency in trapping PCDD/F, especially in gaseous form." The limited adsorbency of the XAD-2 resin requires a backup system downstream from the resin column.
- Method 23 specifies that a condenser is placed immediately upstream from the resin column: "...[W]ater condensed by the cooler may cover the XAD-2 resin nonuniformly, occasionally resulting in partial routing of flue gas in the column. Under such a condition, flue gas introduced into the system would preferentially pass through the dry XAD-2 resin, avoiding the wet area with higher air resistance, resulting in incomplete trapping of PCDD/F in the flue gas."
- "Since the XAD-2 resin after sampling may be moist, this would disturb the extraction of PCDD/F from the resin by nonpolar solvents. In addition, the XAD-2 resin generally contains several monomers of the resin raw materials ... that would be simultaneously extracted in the separation of PCDD/F, and they may disturb the analysis of PCDD/F by gas chromatography/low resolution mass spectrometry."

Another recent study involving USEPA Modified Method 5 (also known as Method 23) raises the possibility that dioxin concentrations measured using this method may vary according to the concentrations of HCI in stack gases. Tan and Liem (1996) reported that higher HCI in stack gases resulted in lower recoveries of certain semi-volatiles by desorbing them from the XAD-2 resin during sampling. At low HCI concentrations, such as those commonly found after acid gas scrubbers, recovery efficiencies for all chlorophenols averaged 95 percent. At higher HCI levels, recovery of less chlorinated species, such as 4-chlorophenol, was as low as 16 percent. More highly chlorinated species were less affected, with pentachlorophenol recoveries as high as 89 percent.²¹

The quantification of dioxins in combustor gases, as has been made obvious by the preceding discussion, is quite accurately and succinctly described by Unsworth et al. (1995) as follows: ²²

"There are no standard repeatability or reproducibility values available for dioxin concentration in flue gases — significant potential sources of error occur in both the sampling and analysis procedures."

Given these constraints, it seems unlikely that any relationships would arise from the statistical analyses employed. Although these issues are raised by Rigo et al., they are not sufficiently addressed as contributing factors to poor correlations with regard to their own analyses and interpretations.

With this extent of uncertainty in mind, it is quite surprising that a preponderance of positive relationships between chlorine input and dioxin stack emissions was evident among the statistical values calculated by Rigo et al. for individual full-scale municipal waste, medical waste and hazardous waste combustors as well as by the values calculated by Greenpeace for cement kilns. Perhaps these findings are indicative of stronger underlying trends linking chlorine input with dioxin concentrations in stack emissions, at least in certain types of combustors. In any event, these findings appear to heighten the probability that evaluation of more appropriate, accurate data (e.g., dioxin concentrations in other combustor residues, production rates of the residues, stack gas flowrates, waste feedrates or chlorine feedrates, etc.) would have found chlorine input to correlate positively with total dioxin output from the full-scale combustors in this study.

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¹⁸ Rigo et al., p. 2-8.

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THE BURNING QUESTION: CHLORINE & DIOXIN

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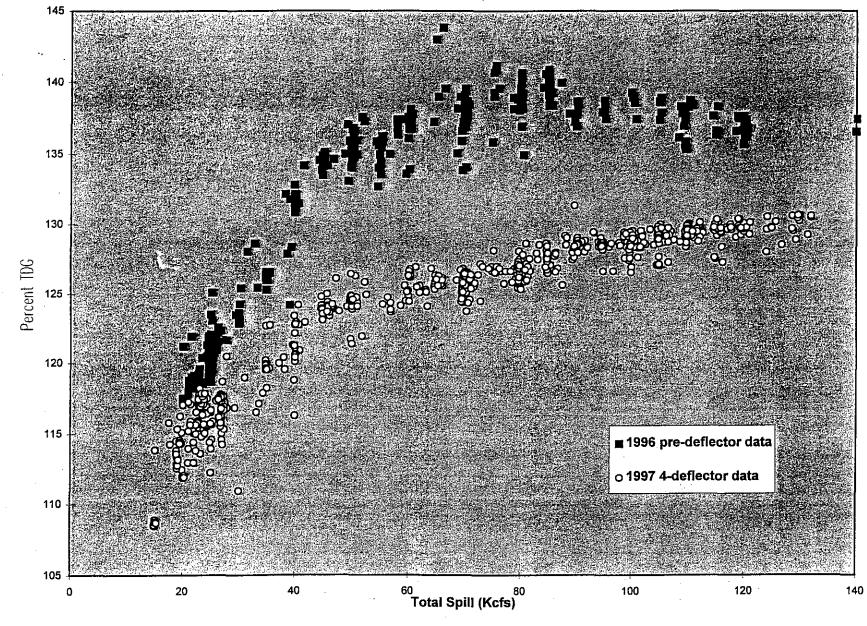
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19 May 1997

Oregon Department of Environmental Quality Eastern Region, Bend Office Brett McKnight, Manager 2146 NE 4th Street Suite 104 Bend, OR 97701 STATE OF OREGON DEPARTMENT OF ENVIRONMENTAL OUALITY PECEIVED MAY 2.0.1997

EASTERN REGION

BEND

Dear Mr. McKnight,

Enclosed is a report containing the answers of Pat Costner, Senior Scientist with Greenpeace, to the questions asked by the Environmental Quality Commission and presented to Dr. Kristiina Iisa by the Department of Environmental Quality in letters dated August 8, 1996 and September 6, 1996. Ms. Costnr's answers are disturbingly different than Dr. Iisa's, and are well-documented.

I request that you review and respond to Ms. Costner's information and conclusions. They raise fundamental questions regarding the wisdom of proceeding with plans to incinerate chemical weapons. Costner notes, for instance, that the proportion of sulfur that will be burned in the incinerator will likely <u>increase</u> dioxin formation, not inhibit it, as Dr. Iisa claimed; and can also form sulfur analogues of dioxins, which are toxicologically similar to dioxin. She also documents the fact that neither the Oregon Department of Environmental Quality nor the U.S. Army will be able to evaluate the amount of nerve gas that will be released into the air by the incinerator during operation, nor accurately determine the amount of dioxins released.

On May 4, 1997, I requested that Pat Costner review the report of Dr. Iisa, because of my continuing concern that the Department of Environmental Quality and the Environmental Quality Commission have failed to prepare a public alternatives assessment, a publicly-reviewable and independently reviewed environmental impact statement, regarding the pros and cons of incineration and non-incineration methods for disposal of nerve gas weapons at the Umatilla Army Depot.

Ms. Costner has been reviewing incineration documents for more than ten years and has recently written a report, *The Burning Questin: Chlorine & Dioxin*. Pat Costner is the scientist who revealed in 1991, by analyzing test burn data, that dioxin was being destroyed in the Jacksonville dioxin incinerator at a 99.96% rate, not a 99.9999% rate as the U.S. Environmental Protection Agency (EPA) had claimed would occur. The EPA subsequently indicated that, contrary to their statements to the public throughout the U.S., for years they had known that the incinerators would not really destroy dioxin to "six nines."

Pat Costner was invited to speak at the July 11, 1996 Environmental Quality Commission Worksession on chemical weapons disposal. Ms. Costner spoke regardingthe limitations of incineration (e.g., failures at the JACADS facility on the Johnson Atoll), and alternative methods of chemical weapons disposal.

Please provide me with your response to the enclosed information in Ms. Costner's report. The issues of dioxin formation and release, and release of nerve gas are, as you know, of critical significance to Oregonians and the nation.

Sincerely,

Mary H. O'Brien Mary O'Brien, Ph.D.

Langdon Marsh Governor John Kitzhaber Commissioner Henry Lorenzen Sen. Gordon Smith Sen. Ron Wyden Rep. Peter DeFazio James R. Wilkinson, Confederated Tribes of the Umatilla Indian Reservation

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13 MAY 1997

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Attached is a report that responds to questions asked by the Oregon Department of Environmental Quality about various issues related to the incineration of chemical warfare agents. The questions were presented to Dr. Kristina lisa, Oregon State University, in letters dated August 8, 1996 and September 6, 1996.

The major findings of this report are as follows:

- Sulfur can either inhibit or promote dioxin formation in combustion systems, depending on numerous factors including the source and/or mode of addition of the sulfur and the ratio of sulfur to chlorine in combustor feedstocks. The ratio of sulfur to chlorine in the chemical agents and related materials appears to fall in the range where dioxin promotion might be expected. In addition, sulfur analogues of dioxins, which are toxicologically similar to the dioxins, can also be formed.
- Dioxin emissions from incinerators and other combustion systems are dependent on chlorine input, based on numerous published reports in the peer-reviewed scientific literature. It is well known that dioxin formation is also influenced by other factors. This does not, however, obviate the basic dependency of dioxin formation on chlorine input.
- There is no sound, scientific basis for estimating dioxin emissions from the proposed chemical agent incineration facility. However, due to the greater chlorine input to this facility, dioxin formation and, consequently, dioxin emissions, can be expected to be considerably greater than those of similar facilities burning natural gas only.
- Since the chlorine content of HD (mustard) is almost identical to that of polyvinyl chloride (PVC) plastic, this agent is an excellent source of the chlorine necessary for dioxin formation.
- Emissions of unburned agent, dioxins and other products of incomplete combustion (PICs) can be expected to be higher during system startups, shutdowns and upsets than during normal operations. Chemicals that are similar, both structurally and toxicologically, to the dioxins can be expected to occur as PICs during the incineration of the chemical agents and related materials.

RECYCLED PAPER

- The primary method for reducing and/or eliminating dioxin formation in combustion systems is by excluding chlorine-containing materials from combustor feedstocks. Otherwise, there are several abatement techniques and technologies that are currently in use at waste incineration facilities. However, the performance of such measures can be highly variable.
- One additional issue of considerable importance is the evaluation of incinerator performance, as determined by measuring agent input to the incinerators and agent emissions in stack gases. According to reports of incinerator tests at the Tooele Depot, the method for sampling and analyzing agent in stack emissions suffers from functional difficulties that result in gross underestimations of the quantities of active agent emitted in stack gases. This suggests both that the method has not yet been validated but also that any incinerator performance evaluations based on data from this method of sampling and analysis have overestimated the incinerator destruction and removal efficiency (DRE) with agent.

If there are further questions regarding this report, or we can provide any further information for your deliberations, please contact us at any time.

Sincerely yours,

Loon-

Pat Costner Senior Scientist

GREENPEACE

RESPONSE TO QUESTIONS FROM OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY ON ISSUES RELATED TO INCINERATION OF CHEMICAL WARFARE AGENTS

By Pat Costner Greenpeace International Science Unit 13 May 1997

QUESTION #1: "The DEQ has received technical information indicating that sulfur is an inhibitor to the formation of dioxins. Does sulfur act as an inhibitor to the formation of dioxins and will the sulfur present in mustard (HD) act as an inhibitor for dioxin formation in the proposed incineration process for the UAD incinerators."

1.0 Sulfur and Dioxin^a Formation

Sulfur has been found to inhibit dioxin formation during combustion under some conditions and to promote dioxin formation in others. Two factors that influence the impact of sulfur on dioxin formation are as follows:

Source or mode of addition of the sulfur; and

Ratio of sulfur to chlorine in the feedstock

1.1 Impact of Source and/or Route of Entry of Sulfur on Dioxin Formation

Ogawa et al. (1996) found that the source, or mode of addition of sulfur, influenced the extent to which dioxin formation was inhibited:¹

"...[T]he effect of dioxin reduction varied depending on the mode of sulfur addition... However, there are phenomena which can not yet be explained. Further basic studies are necessary for reduction of dioxin in the combustor."

Specifically, Ogawa et al. (1996) found that the extent to which dioxin formation was inhibited differed, depending on whether the sulfur was added as gaseous sulfur dioxide or as elemental sulfur incorporated into the feedstock, or whether the sulfur was indigenous to the feedstock.

^a The terms "dioxin" and "dioxins" include all polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs).

1.2 Impact of the Ratio of Sulfur to Chlorine on Dioxin Formation

Raghunathan and Gullett (1996) found the addition of sulfur to increase dioxin formation when the sulfur to chlorine ratio (S/CI molar ratio) was low and to inhibit formation at higher S/CI ratios. For example, during the combustion of coal, municipal combustor flyash and hydrogen chloride with added sulfur dioxide, dioxin formation continued to increase as S/CI ratios were raised from 0.40 to 0.71. A significant decrease in dioxin formation occurred only when the S/CI ratio reached 1.15. In addition, these researchers raised the possibility that reductions in dioxin formation were due in some part to the formation of the sulfur analogues of the dioxins.²

"...[O]ur work also shows that a coal combustion environment, especially when combined with MWC conditions, can in fact increase PCDD and PCDF yield if S/CI ratio is not sufficiently high...This work does not address the possibility that the presence of S can affect the PCDD and PCDF formation...by forming polychlorodibenzothiophenes (PCDTs) and polychlorothianthrenes (PCTAs), and S analogs of PCDD and PCDF."

The sulfur analogues of dioxins, PCDTs and PCTAs, have been identified in incinerator emissions and residues as well as in the surrounding environment^{3,4} Since they are similar to dioxins, not only structurally but also toxicologically, a USEPA work group has recommended that risk assessments for hazardous waste incinerators address these chemicals as well as other sulfur and nitrogen heterocyclics that occur as products of incomplete combustion (PICs).⁵

1.3 Sulfur and Chlorine Content of Feedstocks for Chemical Agent Incinerators

Sulfur is part of the molecular structure of both HD (also known as mustard) and VX. HD also contains 7.38 percent free sulfur, while VX contains sulfur in the forms of free mercaptan (1 percent), sulfuric acid (0.3 percent), and free sulfur (0.14 percent). GB contains no sulfur.⁶

Small amounts of sulfur, in the forms of antimony sulfide, lead thiocyanate and lead sulfocyanate, are found in the M55 rockets and other munitions⁷ which contain GB and VX at Umatilla Depot.⁸

Chlorine is part of the molecular structure of only one agent, HD. The chlorine content of pure HD, 44.6 percent by weight, is essentially identical to that of consumer products made of PVC plastic.⁹ Such products are the primary sources of chlorine in the feedstocks to municipal and medical waste incinerators, which have been identified by the U.S. Environmental Agency (USEPA) as the sources of more than 80 percent of all identified dioxin

emissions.¹⁰ HD also contains chlorine in the form of hydrogen chloride (0.11 percent) and ferric chloride (0.5 percent).¹¹

Although no chlorine is part of its molecular structure, GB contains chlorine in the form of 0.1 percent hydrogen chloride.¹² There is apparently no chlorine source associated with VX.

Additional sources of chlorine to the incinerators include the hypochlorite solutions (described as "5 percent bleach"),¹³ which are used for decontamination purposes, primarily for VX and HD.¹⁴ These solutions were fed into the secondary combustion chamber of the liquid incinerator while agents were burned at the Army's Johnston Atoll Chemical Agent Disposal System (JACADS).¹⁵

HD has the molecular formula $C_4H_8Cl_2S$. Since sulfur has an atomic weight of 32 and that of chlorine is 35.45, HD has a S/CI molar ratio of 0.45. From the study by Raghunathan and Gullett (1996), it appears likely that dioxin formation will be promoted at this S/CI ratio, rather than inhibited. When consideration is also given to chlorine-containing decontamination solutions as well as the other sulfur sources, the S/CI ratio of the entire feedstock, of which HD is one constituent, can be expected to be in the same general range as that of HD alone.

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QUESTION #2: "Can dioxins be formed in a combustion process when chlorine is not an ingredient in the waste feed (i.e., chlorine in trace amounts as combustion air)?

2.0 Chlorine and Dioxin Formation

Chlorine is part of the molecular structure of dioxins. Consequently, if no chlorine is present during combustion, no dioxins can be formed.

2.1 Chlorine in Ambient Air and Dioxin Formation

Ambient air, which is the usual source of combustion air, typically carries trace levels of chlorine in suspended particles of sea salt and industrial pollutants (e.g., dioxins, PCBs and other organochlorines). As a consequence, dioxins can be formed when ambient air is combusted. If ambient air is not subjected to combustion, no dioxins will be generated from the airborne chlorine. Moreover, studies of archived soil and vegetation,¹⁶ lake sediments,¹⁷ and mummified human remains¹⁸ indicate that, prior to industrial production and use of elemental chlorine and the subsequent dispersal and disposal by combustion of related products and by-products, combustion processes involving ambient air produced little if any dioxins, even in circumstances where entrained sea salt 'particles could be expected to be high.

In short, no dioxins will be formed if no chlorine is present during combustion. No dioxins will be formed from the trace amounts of chlorine in ambient air if it is not combusted. When unpolluted air is combusted, little if any dioxins are formed.

2.2 The Relationship Between Chlorine Input to Combustors and Dioxin Output: An Overview

Laboratory and pilot scale studies have shown increased chlorine in combustor feedstocks leads to higher dioxin output. ^{19,20,21,22,23,24,25,26} Contrary to some assertions, positive correlation between chlorine input and dioxin emissions has also been well-documented in studies of full-scale combustors.^{27,28,29,30,31,32} Indeed, a recent review of one study of full-scale combustors, Rigo et al. (1995),³³ has disclosed that the authors of this study actually found but did not report a predominance of positive correlation.³⁴

In other words, studies with full-scale combustors and those with laboratory and pilot scale systems show general agreement that increased chlorine input leads to higher dioxin output. Consequently, as pointed out by an advisory group for the U.K. Department of the Environment, avoiding chlorine input is the primary means whereby dioxin output from incinerators can be minimized.³⁵

"One of the more obvious primary ways of minimizing TOMPS [toxic organic micropollutants, e.g., dioxins] in incinerators and in other thermal processes is to try to avoid (or reduce) TOMPs, their precursors or fundamental species (such as chlorine or bromine) being included in the feedstock."

2.3 Dioxin Output at the Army's Johnston Atoll Chemical Agent Disposal System

In evaluating the data describing dioxin releases from the JACADS incinerators, it is important to note the following characterization given in a report for USEPA:³⁶

"[T]he issue of products of incomplete combustion (PICs) was not an active area of concern for the trial burn at JACADS."

Due to numerous problems during trial and test burns at JACADS as well as lack of essential data, the total dioxin output from the JACADS incinerator during the various tests cannot be quantified. Likewise, the reported dioxin concentrations in incinerator emissions cannot be regarded as quantitatively accurate.

One of the most obvious features of the dioxin emission data from JACADS is their extreme variability. As shown in Table 1 of the report by Dr. Iisa, only the tests of GB in the dunnage furnace (DUN) show an acceptable level of certainty.³⁷ However, as explained in Section 2.4 describing the limitations of the method used for stack sampling and analysis, dioxin emission data are inherently highly variable. For example, data gathered during series of tests at one incinerator in which analyses were carried out by one laboratory showed an uncertainty of +/-30 percent.³⁸ In another study, replicate measurements of dioxin emissions varied by as much as three orders of magnitude.³⁹

The dioxin emission data from JACADS are most useful, however, in a qualitative sense: They demonstrate that dioxins were generated and released during the combustion of all agents in all incinerators. The occurrence of surprisingly high dioxin concentrations in ash and slag attest to the likelihood that dioxin concentrations in stack emissions may have been underestimated.

For example, only low concentrations of dioxins, e.g., a maximum of 1.5 nanograms per cubic meter,⁴⁰ were measured in stack emissions during tests with HD in the metal parts furnace. However, the ash residue in the ton containers in which the HD was conveyed into the metal parts furnace carried

dioxin concentrations ranging from 2,000 to more than 16,000 nanograms TEQ¹ per kilogram (ng TEQ/kg). The slag generated when HD was burned in the liquid incinerator was found to have a dioxin concentration of 287 ng TEQ/kg.⁴¹ In both cases, dioxin concentrations in these solid residues far exceeded the 0.4 ng TEQ/kg limit set by the U.S. Environmental Protection Agency for delisting such residues so that they could be placed in hazardous waste landfills.⁴²

While some of the difficulties with the JACADS dioxin emission data can be attributed to the general limitation of the method used for sampling and analysis, others are specific to the JACADS operations. During some of the trial burns, the Army failed to follow USEPA protocols and procedures for sampling and analysis of dioxins in stack emissions. For example, in the trial burn with GB in the liquid incinerator, dioxin analyses failed to meet quality assurance/quality control standards, suggesting that reported dioxin concentrations were biased low.⁴³

Moreover, analyses were not conducted according to USEPA guidance: Rather than analyzing for the 2,3,7,8-substituted congeners that are of greatest toxicological concern and are essential for risk assessments, only the homologue groups were reported (tetra-, penta-, hexa-, hepta-, and octachlorodibenzo-p-dioxins and -dibenzofurans).⁴⁴ Since this type of analysis generally has higher detection limits, i.e., is less sensitive, the results can be expected to be biased low.

2.4 Limitations of Sampling and Analysis of Dioxins in Stack Gases

The values that have been reported for dioxin concentrations in stack gases at JACADS and other combustion systems are only as reliable and accurate as the sampling and analysis procedures.

Commenting on the difficulties of sampling combustor stacks, Janssens et al. (1992) noted *"the possibility of serious artifacts occurring in situ during the sampling of the hot effluent."* Comparing sample collection with analysis, they concluded as follows:⁴⁵

"Much larger errors can be made during the sample collection in the stacks of incinerators."

Funcke et al. (1992) warned that *"possible non-homogeneities in the flue gas channel have to be taken into consideration."* ⁴⁶ Fangmark et al. (1990)

¹ "TEQs" are toxic equivalents of the most potent of the dioxins, 2,3,7,8-tetrachlorodibenzo-pdiioxin (2,3,7,8-TCDD). TEQs are derived by summing the products obtained by multiplying the concentrations of each of the 17 individual PCDD/Fs of greatest toxicological concern by the toxic equivalency factor (TEF) that is assigned to each one, based on its potency relative to that of 2,3,7,8-TCDD.

observed, "It is not unusual to accept a lower degree of precision during sampling compared to the analytical precision, though weaknesses in sampling methodology and sampling strategy could spoil the relevance of many results."⁴⁷

The same method for sampling and analyzing dioxin emissions at JACADS, USEPA Method 23, is used for all trial burns and compliance tests in the U.S. USEPA Method 23 has numerous shortcomings. Some are less serious, external issues that can be resolved by external measures. For example, the complexity of the sampling train makes it difficult to assemble and to operate correctly, leading operating personnel to deviate from approved procedures.⁴⁸

Others, such as those that are intrinsic to the method, are less easily resolved. When USEPA scientists assessed the predecessor to Method 23, Modified Method 5 (MM5), they measured the recovery of dioxin congeners that were introduced through both static and dynamic spiking. For dynamic spiking, isotopic dioxin congeners were injected into the front end of a sampling train while combustor gases were sampled. With a lab-scale combustor, MM5 had recoveries of dynamically spiked congeners ranging from 50 to 99 percent. However, at full-scale incinerator, "recovery of the dynamic spikes had an overall average of 21% and were moderately variable."

During the same study, USEPA also pursued methods for improving spike recoveries and, thus, the overall accuracy and precision of the method. For example, the overall recovery of dynamically spiked isotopic dioxin congeners was increased to 26 percent by extracting sample filters with benzene rather than the dichloromethane specified in the method. Considerably greater improvements were noted when the back-half glassware of the MM5 sampling train was coated with a thin layer of a special grease. At the full-scale incinerator, rinsing the coated back-half glassware with toluene resulted in recoveries ranging from 62.9 to 107 percent, although precision was relatively poor.

When USEPA officially replaced MM5 with Method 23 in 1991, the Agency did not incorporate the changes that had led to markedly higher recoveries during dynamic spiking, albeit with poor precision.⁵⁰ Since the only substantive difference between MM5 and Method 23 is the substitution of toluene for dichloromethane during extraction, the overall recovery of Method 23 can be expected to be at or near the 26 percent achieved with MM5. However, no similar analysis of dynamic spiking recoveries has been reported for Method 23.

USEPA Method 23 uses XAD resin as the adsorbent for PCDD/Fs. Takeshita et al. (1995) recently identified three *"controversial problems in the* application of XAD-2 resin as an adsorbent for the sampling of PCDD/F in flue gas" in USEPA Method 23:⁵¹

- "One of the most important problems is the efficiency in trapping PCDD/F, especially in gaseous form." The limited adsorbency of the XAD-2 resin requires a backup system downstream from the resin column.
- Method 23 specifies that a condenser is placed immediately upstream from the resin column: "...[W]ater condensed by the cooler may cover the XAD-2 resin nonuniformly, occasionally resulting in partial routing of flue gas in the column. Under such a condition, flue gas introduced into the system would preferentially pass through the dry XAD-2 resin, avoiding the wet area with higher air resistance, resulting in incomplete trapping of PCDD/F in the flue gas."

 "Since the XAD-2 resin after sampling may be moist, this would disturb the extraction of PCDD/F from the resin by nonpolar solvents. In addition, the XAD-2 resin generally contains several monomers of the resin raw materials...that would be simultaneously extracted in the separation of PCDD/F.. and they may disturb the analysis of PCDD/F by gas chromatography/low resolution mass spectrometry."

Another recent study involving USEPA Method 23 raises the possibility that dioxin concentrations measured using this method may vary according to the concentrations of HCI in stack gases. Tan and Liem (1996) reported that higher HCI in stack gases resulted in lower recoveries of certain semi-volatiles by desorbing them from the XAD-2 resin during sampling. At low HCI concentrations, such as those commonly found after acid gas scrubbers, recovery efficiencies for all chlorophenols averaged 95 percent. At higher HCI levels, recovery of less chlorinated species, such as 4-chlorophenol, was as low as 16 percent. More highly chlorinated species were less affected, with pentachlorophenol recoveries as high as 89 percent.

The quantification of dioxin in combustor gases, as has been made obvious by the preceding discussion, is succinctly described by Unsworth et al. (1995) as follows:⁵³

"There are no standard repeatability or reproducibility values available for dioxin concentration in flue gases – significant potential sources of error occur in both the sampling and analysis procedures."

2.5 Availability of Metals for Catalyzing Dioxin Formation During the Incineration of Chemical Agents and Related Materials

The presence in incinerator feedstocks, flue gases, and incinerator hardware of many metals – e.g., cadmium, cobalt, copper, iron, lead, nickel, and zinc – has been correlated with dioxin formation^{54,55} Indeed, the relationship between metals and dioxin formation has been summarized by Acharya et al. (1991) as follows:⁵⁶

"Any of the multiplicity of trace metals present may act as a catalyst...."

The chemical agents themselves carry an ample supply of metals suitable for catalyzing dioxin formation, as shown below:

Metal Content of Chemical Agents⁵⁷

	· · ·		
<u>Agent</u> GB	<u>Metal</u> Aluminum	Concentration, Percent	
	Iron	0.1	
	Nickel	0.0025	
•	Copper	0.0004	
VX	Iron	0.05	
	Aluminum	0.01	
	Nickel	0.0025	
HD	Iron (as iron chloride)	0.5	
	Aluminum	0.01	
	Nickel	0.0025	
· .	Copper	0.0004	
		•	

Metals – e.g., antimony, barium, lead and magnesium – are also found in various forms in the explosives and propellants contained in the munitions destined for incineration.⁵⁸ The ready:availability of metals during the incineration of chemical agents is evidenced by the occurrence in stack gases of the JACADS metal parts furnace during the HD trial burn. Some of these metals were present in the stack gases at concentrations as high as 200 micrograms per dry standard cubic meter.⁵⁹ In summary, there is ready availability of an ample supply of metals for catalyzing dioxin formation during the combustion of chemical agents and related materials. Indeed, the release of metals in stack gases and other residues would appear to be a cause for concern.

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QUESTION # 3 "Because the UAD incinerators are natural gas fired, would one expect other natural gas fired combustion facilities such as the Co-Gen facilities in the area, to form dioxin if chlorine was not a key component? If so, at what mass emission rate would dioxin be produced?

3.0 Dioxin Output from Other Sources

As discussed earlier, the input of any amount of chlorine into any combustion process can result in dioxin formation. Consequently, the natural gas fired combustion facilities in question are potential dioxin sources. However, since dioxin formation is affected by many other factors, e.g., combustor design and operation, air pollution control systems, it is not possible to predict the mass emission rates of dioxin from such facilities.

It is important to note, however, that a group of eminent scientists, including several from USEPA, has concluded that the average dioxin levels in the bodies of average U.S. citizens are at or near those levels at which health effects are known to occur.⁶⁰ As a consequence, the introduction of additional dioxin sources should be avoided, since this can only result in further insult to the health of populations that are already at risk.

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QUESTION #4: "How would the dioxin mass emission rate for the UAD incinerators while operating on natural gas compare to when mustard (HD) is introduced into the incinerators versus not introduced into the incinerators? What is the dioxin reduction for the UAD incinerators if HD is not burned? In calculating the dioxin emission, the calculations should include start up, shut down, normal operations, and upset conditions."

4.0 Dioxin Output of UAD Incinerators

Given the positive relationship between chlorine input and dioxin emissions from combustors, the dioxin mass emission rate for the UAD incinerators should be markedly lower when only natural gas is burned than when both natural gas and HD are burned, since chlorine input would be far lower. As discussed earlier, during normal operations, the UAD incinerator feedstocks will also include other chlorine sources, such as hypochlorite decontamination solution. In summary, chlorine input and, consequently, dioxin output can be expected to be highest during the incineration of HD and related materials, somewhat lower for GB (which contains 0.11 percent by weight of hydrogen chloride) and related materials, lower still for VX and related materials, and lowest for natural gas only.

In addition to chlorine input, many other factors influence both total dioxin output and dioxin emissions in stack gases, e.g., incinerator design, feedstock characteristics, flue gas temperature, flue gas moisture, etc. It is also important to note *that "different facilities behave in dissimilar manners."*⁶¹ In summary, there is no scientific basis for relying on output or emission data from other facilities, including JACADS, for making quantitative estimates of dioxin releases from the UAD incinerators.

4.1 Dioxin Emissions During Startups, Shutdowns and Upsets

USEPA describes the issue of estimating emissions during combustor startups, shutdowns and upsets as follows:⁶²

"One of the more difficult aspects in deriving pollutant emission rates from incineration sources is the accounting for temporary emissions that may occur as a result of startup and shutdown in operations, malfunctions or perturbations in the combustion process or changes in the removal efficiency of the air pollution control equipment."

During emergency operating conditions, USEPA recommends that dioxin emissions be *assumed "to be 100 times higher during a 1 hr.-period."*⁶³ For poor operating conditions, USEPA suggests following the recommendations of the California Air Resources Board (CARB) that stack emissions be estimated as ten times higher than during normal operating conditions. CARB tests at one

incinerator showed that dioxin emissions increased fifty times during upset conditions.⁶⁴

In a national survey of hazardous waste incinerators, USEPA reported a *"significant number of automatic waste feed cutoffs at half of the hazardous waste incinerators inspected."⁵⁵* The number of waste feed cutoffs reported during a 30-day period varied from 0 to 13,325 (at a facility with four incinerators), with an average, among 16 incinerators, of 38 waste feed cutoffs per day per incinerator.

Each time the waste feed to an incinerator is interrupted, the incinerator undergoes an "upset", a deviation from optimum operating conditions. USEPA's Science Advisory Board cautioned as follows:⁶⁶

"Even relatively short-term operation of incinerators in upset conditions can greatly increase the total incinerator-emitted loadings to the environment."

At some incinerators, USEPA also found a high rate of opening emergency by-pass systems, whereby pollution control devices are by-passed and stack gases are vented directly to the emergency by-pass systems. During a 6-month period, the number of times emergency by-passes were opened at the facilities inspected ranged from 0 to 867 (at a facility with four incinerators), with an average, among 12 incinerators, of 80 times in 6 months, or approximately once every three days.⁶⁷

One of the objectives of the shakedown period is, of course, to identify and remedy problems in design, construction and installation. Such problems can be numerous, even with the most thoroughly executed plans and programs, as evidenced by the Army's experience during the shakedown period for their incineration of GB in the liquid incinerator (LIC) at JACADS. This facility was shut down almost twice as often as it was operable because of such problems: 500 hours of operation were accompanied by a total downtime of 929 hours.⁶⁸

Incinerator upsets were the primary factor leading to the release of active nerve agent into worker corridors on 32 occasions. Indeed, it can be argued that the JACADS incineration facility suffered near-continuous upset conditions during the shakedown period. This was evidenced by the triggering of an average of 22 major process alarms per day (major process alarms are those "that are so important that agent or spent decon processing is stopped"). The cause of these alarms was described as follows:⁵⁹

"The majority of these alarms were for high CO concentration in the [LIC] secondary chamber exhaust gases. There was no significant change in the number of alarms throughout the campaign."

The concentration in stack gases of carbon monoxide (CO) is commonly used as a surrogate indicator of incinerator performance because high CO levels increase during major upset conditions, which are also accompanied by high emissions of products of incomplete combustion (PICs). I.e., high CO levels are associated with high rates of PIC emissions.

It is important to note that USEPA offered a strikingly novel interpretation of the law on behalf of JACADS: the RCRA violations were redefined as only "exceedances", since hazardous feed was stopped after each violation. I.e., if the waste feed was stopped after the violation took place, then the violation did not take place. The "exceedances" during the GB campaign of the LIC and deactivation furnace system (DFS), as well as those of the dunnage incinerator (DUN), are presented in the table below:⁷⁰

Furnace	Item	Limit	No. of Exceedances Outside Ops ¹	No. of Exceedances During Ops	No. of Violations
LIC	CO	<200 ppm, 5 min	77	3	0
	02	5-10 percent	496	23	0
DFS	со	<200 ppm 5 min	168	0	0`
	02	6-14 percent	299	12	0
DUN	CO .	<200 ppm 5 min	166		-
•	02	8-14 percent	180		-

JACADS "RCRA Permit Exceedences/Violations (sic)"

These "exceedances" were explained as follows:⁷¹

"It should be noted that examination of the circumstances of most of the exceedances shows that virtually all were associated with transient conditions in the furnace. Such conditions may arise, for example, from a changeover from one fuel to another, introduction of agent into the furnace with reduction of the standby fuel, or termination of agent feed with a fuel increase; or operating component failure."

¹ "Outside Ops" refers to exceedances that occurred while agent was not being processed; "During Ops" refers to those that took place while agent was being processed. In assessing the effects of incinerator operating conditions, Wallace (1992) found as follows:⁷²

"Emissions of CO and THC [total hydrocarbons] vary markedly among the different phases of the operating cycle. As expected, they are erratic during startup. However, somewhat surprisingly, the emissions can be higher and are generally more variable during burndown and cooldown than during normal operations."

In summary, due to increased emissions during startups, shakedowns, cooldowns, upsets and poor operating conditions, the cumulative emissions of dioxin and other PICs from the UAD incinerators can be expected to be considerably higher than indicated by emissions during trial and test burns.

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QUESTION #5: "What is considered state of the art design technology for preventing dioxin formation in a combustion process? What are the essential design elements of a pollution abatement system for controlling dioxin emissions from a combustion process?"

5.0 Technologies for Preventing Dioxin Formation in Combustion Processes

To prevent dioxin formation in combustion sources, chlorine input must be eliminated. As yet, there are no technologies for preventing dioxin formation once chlorine enters into combustion processes. This was acknowledged by many of the forty international experts on incineration who discussed the topic of dioxin formation from combustion sources at the Dioxin Workshop on Formation Processes and Sources, which was convened by USEPA in Chevy Chase, Maryland, November 18-20, 1996.

Perhaps the most meaningful insight into the issue of dioxin abatement is provided by the experiences gained during the efforts to bring the most modern, state-of-the-art commercial hazardous waste incinerator in the U.S., the WTI facility in East Liverpool, Ohio, into compliance with dioxin emission guidelines. USEPA established a group of experts to review and evaluate the efforts to reduce dioxin emissions at this facility. These experts found as follows⁷³:

"It is painfully clear that little effort had been extended by the technical community to develop procedures to provide reasonable estimates of the combustion emissions ...

The apparent state-of-the-art design of this facility should have resulted in low emissions of these dioxins and furans. According to the March 1993 Trial Burn Results, however, emissions of PCDD/F were relatively high (toxicity equivalents [TEQ] 20-64 ng Seconds⁻¹, i.e. greater than 30 ng meters⁻³ PCDD/F) in spite of a two-point carbon injection system. Because these emissions were a factor or 100 higher than that reported for typical hazardous waste incinerators, a so-called enhanced carbon injection system was installed. During a three day performance test of this new system in August 1993, PCDD/F stack emissions ranged from 6 to 39 ng m⁻³ (arithmetic average: 13). ...

The procedures for estimating emissions under upset conditions is not well developed...Short-term increases in incinerator emissions can result from process upset conditions and accidents.

Fugitive emissions. The process of handling collected ash from the kiln should be included in the estimation of fugitive emissions. ...Non-routine and Fugitive Emissions. The group is very concerned that potential emissions from non-routine conditions be considered as a major part of the risk assessment and not an afterthought. These may be the most important exposures and they should be fully evaluated."

It is well known that both the magnitude of the dioxin output and its pattern of distribution among stack emissions and other combustor residues are influenced by numerous factors. For example, depending on the materials from which they are constructed, wet scrubbers can either reduce or increase dioxins in stack emissions and alter the PCDD/F profile, while adding to the dioxin load in scrubber water and subsequent treatment residues, such as filter cake.⁷⁴ Other methods that reduce dioxin stack emissions may increase total dioxin output, as has been observed with carbon injection.⁷⁵

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Another Important Issue #6:

6.0 Detection and Quantification of Agent in Incinerator Stack Gases and Implications for Evaluations of Incinerator Performance

The state of knowledge of the incineration of chemical agents has been described in a USEPA report as follows: ⁷⁶

"Little is known about the exact behavior of these compounds [chemical warfare agents] during combustion, or about the effect of large amounts of these compounds on the performance of chemical agent incinerators."

In this same report, the lack of validated stack sampling methods for the chemical agents, GB and VX, was discussed:⁷⁷

"No validated stack sampling methods exist for chemical agents ...; use of the ACAMS as a substitute sampling method for stack gases was necessitated by this lack of a validated MM5 sampling method. As MRI has discovered, no validated stack sampling method is available for any of the phosphate compounds ... There are no EPA stack sampling methods specifically developed for organophosphorus compounds."

"The ACAMS is essentially a field gas chromatograph/flame- photometric detector that has been used to sample stack gases and has been used as an indicator of agent or agent breakdown products in stack gases in the absence of a validated EPA stack testing method for any organophosphorus compounds."

The authors of this report stated explicitly that they were not addressing the issue of a valid method for sampling and analyzing HD in stack gases. However, no description of such a method and its validation has yet been found.

During all of the trial burns and test burns at JACADS, the concentrations of agents in stack gases were determined by the use of a field instrument, the ACAMS, rather than a validated sampling and analysis method.^{78,79,80,81} Consequently, the destruction and removal efficiencies (DREs) calculated for the various incinerators and agents cannot be regarded as accurate, reliable or valid.

As of December 1996, the Army apparently still had no validated method for sampling and analyzing the organophosphorus agents, GB and VX, in incinerator stack gases. The release of agent GB in stack gases during test burns at the chemical agent incineration facility at Tooele, Utah, in mid-December, 1996 is documented in laboratory reports. However, the <u>quantity</u> of GB that was released from the stack remains unknown. The GB in the stack

gases could not be quantified because the agent was either being destroyed during the sampling process or could not be removed from the adsorption medium for analysis, as follows: ⁸²

"One thing to note, the filters from the stack are either binding the GB to the filter or more likely destroying the GB upon contact."

It is also important to note, particularly in relationship to the reported emissions of dioxins and other products of incomplete combustion (PICs) during the trial burns at JACADS, that the relative importance of identifying and quantifying PICs during these efforts was described as follows:⁸³

"[T]he issue of products of incomplete combustion (PICs) was not an active area of concern for the trial burn at JACADS."

In summary, the JACADS trial burns were carried out in the absence of a valid method for detecting and quantifying agents in stack gases and, apparently, without giving appropriate priority to the detection and quantification of dioxins and other PICs. The method currently in use at the Tooele incineration complex for organophosphorus agents, GB and VX, evidently has not been validated and, in any case, is not detecting and quantifying agent with the precision and accuracy requisite for establishing incinerator performance, e.g., the destruction and removal efficiencies for agents. As a consequence, the evaluations of incinerator performance with chemical agents must be regarded as suspect, since a key value, the quantification of agent in stack gases, was determined by methods which have not been validated.

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Atlanta, June 2, 1997

At the request of Oregon DEQ (May 27, 1997 in a phone call by Fredrick Moore and a fax the same day by him) I have reviewed Ms. Costner's report "Response to Questions from Oregon Department of Environmental Quality on Issues Related to Incineration of Chemical Warfare Agents" dated May 13, 1997.

The main conclusions from my review are the following:

- The claim that the presence of sulfur in the agents would likely increase dioxin emissions during incineration in the liquid incinerator is unfounded. The literature shows that, at all sulfur to chlorine ratios, dioxin emissions are decreased as sulfur is added when the fuel is natural gas.
- 2) Full scale studies have shown no consistent dependency of dioxin emissions on the feed chlorine content at high chlorine levels. In some facilities the dioxin emissions increase as the feed chlorine content increases, in others they decrease. Overall there is no dependency of dioxin emissions on the feed chlorine content at high levels of chlorine (order of percents).
- 3) The JADACS facility is the one that most closely resembles the UAD facility, and gives the best available estimate for dioxin emissions from the UAD facility. In making the estimates the factor that needs most to be taken into account is the existence of carbon bed filters in the UAD facility. The filters are expected to reduce dioxin emissions, in particular during upset conditions.
- 4) The measurements at JADACS do not support Ms. Costner's hypotheses that the ratio of chlorine to sulfur in HD is such that it would increase dioxin emissions, and that dioxin emissions are increased as input chlorine levels are increased. If this were true the dioxin emissions would be higher during the incineration of HD than during the incineration of GB. This is because HD has a chlorine content of approximately four hundred times that of GB, and only HD contains sulfur. However, the dioxin emissions from the incineration of HD and GB were the same.
- 5) The dioxin emissions prior to the carbon filters are expected to be higher during disturbances than during normal operation. However, absorption beds operate so that the output concentration is affected very little by the inlet concentration. Thus the carbon beds provide a safeguard against increases in stack dioxin emissions during disturbances.

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I have enclosed a more detailed review of Ms. Costner's report. If you have any questions regarding my review, please, feel free to contact me.

Sincerely

Kristiina lisa Assistant professor

<u>Review of Ms. Costner's report "Response to Questions from Oregon Department of</u> <u>Environmental Quality on Issues Related to Incineration of Chemical Warfare Agents"</u> <u>dated May 13, 1997.</u>

By Kristiina lisa on June 2, 1997

1.0 Sulfur and Dioxin Formation

1.1 Impact of Source and/or Route of Entry of Sulfur on Dioxin Formation

In the study by Okinawa et al. (1996) the addition of sulfur decreased dioxin emissions regardless of the form in which sulfur was added even though the extent varied according to the source.

1.2 Impact of Ratio of Sulfur to Chlorine on Dioxin Formation

In the study by Raghunathan and Gullett (1996) dioxin emissions increased as the sulfur to chlorine ratio was increased only for coal combustion and then only in the presence of municipal solid waste combustor fly ash. No increases in dioxin concentrations were detected for natural gas combustion. The lowest sulfur to chlorine ratio tested for natural gas combustion was 0.64. The dioxin level was decreased by approximately an order of magnitude with this ratio. In the tests of SO_2 addition to the combustion of PVC and saw dust by Okinawa et al. (1996) there was a decrease in dioxin concentrations at all sulfur to chlorine levels, including a ratio of 0.17.

In the UAD liquid incinerators the agents are going to be gaseous, and natural gas is going to be used as fuel. No coal is added, nor any municipal waste ash. Surely the results that are most applicable for the UAD liquid incinerators are those in which natural gas is used as a fuel, and those in which the sulfur is added as SO₂. Thus a decrease in dioxin emissions is expected due to the sulfur in HD.

Even for coal combustion in other experiments by Gullett and Raghunathan (1996) somewhat lower ratios than 1.15 were required for reduced dioxin emissions. Ogawa et al. (1996) found that, with the coal they used, a sulfur to chlorine ratio as low as 0.1 was sufficient for reducing dioxin emissions by a factor of one hundred. Further, Raghunathan and Gullett (1996) attribute the increase in dioxin concentration to other factors that change as coal is added into the system, and that these factors outweigh the inhibiting effect of sulfur.

1.3 Sulfur and Chlorine Content of Feedstocks of Chemical Agent Incinerators

The sulfur to chlorine molar ratio for HD is 0.69 when taking into account all the constituents in the HD. For the molecular formula $C_4H_9Cl_2S$ the sulfur to chlorine molar ratio is 0.5, not 0.45 as suggested by Ms. Costner. Molecular weights are not needed when calculating molar ratios from chemical formulas.

2.0 Chlorine and Dioxin Formation

2.1 Chlorine in Ambient Air and Dioxin formation

The report states that "When unpolluted air is combusted (actually used for combustion) little if any dioxins are formed" but section 3.0 states that "the input of any amount of chlorine into any combustion process can result in dioxin formation." Thus some dioxins may be formed from the chlorine in combustion air. Another source of chlorine may be natural gas.

2.2. The Relationship Between Chlorine Input to Combustors and Dioxin Output: An Overview.

Full scale studies have shown both negative and positive correlations of dioxin output to chlorine input at high chlorine levels, i.e. the dioxin output has either increased or decreased as the chlorine levels have increased (Rigo et al., 1995, Wilson et al., 1995). The conclusions are that there is no general trend of dioxin emissions with chlorine content at high chlorine contents, and that other factors are far more important than the chlorine content of the feed. With feed chlorine contents of 0-10 %, the dioxin emissions were 0.06-500, and with 45-65 % chlorine they were 0.4-20 ng/dscm (nano grams per dry standard cubic meters) corrected to 7 % O_2 .

I have not seen the review by Ms. Costner (reference 34 in Ms. Costner's report) and can not comment on that.

2.3 Dioxin Output at the Army's Johnston Atoll Chemical Agent Disposal System

Table 1 of my earlier report to which Ms. Costner refers is reproduced here. The table shows the measured dioxin concentrations, at the JADACS tests.

Table 1. Sum of the detected concentrations of dioxins (PCDD) and furans (PCDF) in ng/m³ during the experiments at Johnston Atoll. LIC refers to liquid incinerator, DFS to deactivation furnace system, MPF to metal parts furnace, and DUN to dunnage furnace. Source: Appendix G (JADACS Emission Test Summaries and ANCDF Emission Estimates) of the Final SRA, RCRA Part B, RA No. 39-26-1399-95, Revision No. 1, 14 July 1995.

agent	run 1	run 2	run 3	run 4	average
HD LIC	0,1	0.04	0.09	0.33	0.14
VX, LIC	0.06	0	0	0	0.01
GB, LIC	0.13	.02	0.18	-	0.13
VX, DFS	0.64	0.31	0.1	0	0,26
HD, MPF	0.18	0.04	1.21	0.21	0.41
GB, DUN	7,25	6.97	4.02	7,66	6.47

Even though there is variation in the results, more than that dioxins were formed can certainly be concluded. Taking into account the high and low values for each type of trial burns the following qualitative conclusions can be made.

- a) In the liquid incinerator tests the dioxin emission from VX incineration are the lowest, and the emissions from GB and HD are higher and statistically they are the same.
- b) The emissions from the dunnage incinerator are higher than the emissions from any other source.

Ms. Costner comments that the detection limit for the method used at JADACS is possibly higher than for the USEPA guideline method, and that due to this the results may be low. The higher detection limit could affect the results with low dioxin levels (e.g. VX incineration) and those emissions may have been higher than shown in the table. For the other conditions the effect of this is negligible.

Ms. Costner further states that "For example, in the trial burn with GB in the liquid incinerator, dioxin analyses failed to meet quality assurance/quality control standards, suggesting that reported

dioxin concentrations were biased low." If this is true it has some implications for other conclusions in the report (See section 4.0.)

2.4 Limitations of Sampling and Analysis of Dioxin in Stack Gases

Ms. Costner concludes that there is a systematic error in the method used at the JADACS tests and in the US in general. ("...the overall recovery can be expected to be at or near the 26 percent achieved with MM5.") Based on this all measurements would be off by a factor of 4. This does not change any conclusions regarding the relative importance of this facility as compared to other combustion facilities, or the relative importance of dioxin emissions from the incineration of HD as compared to the incineration of the other agents.

2.5. <u>Availability of Metals for Catalyzing Dioxin Formation During the Incineration of Chemical Agents and Related Materials</u>

I agree with Ms. Costner's statement that the presence of metals in incinerators has been correlated with dioxin emissions. This was pointed in my report as well. All the agents contain metal impurities. However, at the JADACS facility the average dioxin emissions were higher from the deactivation furnace with VX, metals parts furnace with HD, and in particular from the dunnage incinerator with GB than those from the incineration of HD or GB in the liquid incinerator. The chlorine input to all of these furnaces was significantly lower than to the liquid incinerator with HD but the inputs to these furnaces contain significantly higher amounts of metals and other impurities. Thus the trace amounts of metals present in the agents are far less important than other factors.

4.0 Dioxin output of UAD incinerators

The report by Ms Costner states that "...dioxin output can be expected to be highest during the incineration of HD and related materials, somewhat lower for GB, lower still for VX and related material, and lowest for natural gas only."

If one believes that there is a significant positive correlation between input chlorine content and outlet dioxin concentration, and that sulfur in HD increases dioxin emissions, the expected outcome is that the dioxin output is "a lot", not "somewhat" lower for GB than for HD. This would be because the chlorine content of HD is approximately four hundred times that of GB, and because HD contains sulfur whereas GB does not.

The results from JADACS do not support the assumption that the dioxin outlet concentration is lower for GB than for HD. The dioxin concentrations (whether taken as the sum of those actually measured, or as the sum of those measured plus the non-measured ones at the detection limit) were essentially the same for HD and GB. This is clearly in contradiction with the conclusions in Ms. Costner's report

In section 2.3 it was further suggested that the dioxin emissions in the trial burn with GB in the liquid incinerator were biased low. If this is the case, the dioxin emissions from the incineration of GB are higher than those from HD incineration, not lower.

The measured results, on the other hand, are in support of my conclusion that the dioxin emissions from the incineration of HD and GB are approximately the same. My conclusion was based on the

assumptions that a) sulfur in HD reduces dioxin emissions, and b) at high chlorine levels there is no correlation between the chlorine input and dioxin emissions.

Another factor to be taken into account when estimating emissions from the UAD facility is that it contains carbon filter beds. The facility at JADACS did not have those. When in operation the carbon beds are going to reduce the outlet dioxin concentration. The way adsorption beds operate is that, as long as the beds are not saturated, the outlet concentration is reduced to the same level regardless of the level of the contaminant in the stream that is fed to the adsorption bed.

Many factors influence both total dioxin output and dioxin emissions in stack gases, and different facilities behave in different manners. However, the facility at JADACS is the one that most closely resembles the UAD facility, and from all the results of dioxin emissions those are the ones that would form the best basis for estimating the dioxin emissions levels before the carbon filters.

The dioxin emissions after the carbon filters are best estimated from results of using carbon filters. Steinhaus and Dirks (1996) reported the results for ten trials with carbon filters. In all of them the dioxin emissions were less than 0.08 ng/sdcm toxic equivalents of dioxins, and in seven less than 0.01 ng/dscm toxic equivalents.

Even if one believes that the emissions from the UAD facility are widely different from those at JADACS one could certainly use the results from that facility to test one's hypotheses. The results from JADACS do not support the hypotheses that chlorine input increases dioxin emissions at high chlorine levels, and that SO₂ increases dioxin emissions. In fact they refute those hypotheses.

4.1 Dioxin Emissions During Startups, Shutdowns and Upsets

The proposed UAD facility contains carbon filters that act as a safeguard for higher dioxin levels during startups, shutdowns and upsets.

5.0 Technologies for Preventing Dioxin Formation in Combustion Processes

As compared to carbon injection carbon beds ensure a significantly better contact between the flue gases and the carbon. Further, they offer a safeguard against increased contaminant concentrations during upset conditions.

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DEPARTMENT OF CHEMICAL ENGINEERING

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OREGON State UNIVERSITY

103 Gleeson Hall Corvallis, Oregon 97331-2702

Corvallis, October 29, 1996

Enclosed is a report containing my answers to the questions on dioxin formation in the proposed Umatilla Chemical Demilitarization Facility. The questions were presented to me in letters from the Department of Environmental Quality dated August 8, 1996 and September 6, 1996. My findings can be summarized as:

Sulfur inhibits dioxin formation. 1)

- 2) Other factors are more important in setting dioxin emissions than the chlorine content in the feed.
- The dioxin emissions from the proposed facility will be less than 1 ng/m^3 during normal 3) operation and not significantly different than emissions from similar plants burning natural gas only.
- 4) The design of the incinerator is not important as long as proper combustion conditions are maintained.
- 5) The most important features of a pollution abatement system for minimization of dioxin emissions are rapid cooling of the flue gases and removal of dioxin by e.g. carbon filters. Both of the methods are employed in the proposed facility.
- No other method offers better dioxin removal than activated carbon filters.

If you have any questions regarding the report or wish further clarification of information, please, feel free to contact me. I apologize for being so slow in writing the report and wish that it can be of assistance to you.

Sincerely

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Kristiina Iisa Assistant professor

STATE OF OREGON DEPARTMENT OF ENVIRIONMENIAL QUALITY

INOV -1 1996

EASTERN REGION REND

Telephone 541-737-4791

Fax 541.737.4600 Answers to the four questions presented by the Department of Environmental Quality in their request dated August 8, 1996 and additionally to the fifth question presented in a separate letter dated September 6, 1996.

1. Sulfur and Dioxin Formation

a. The DEQ has received technical information indicating that sulfur is an inhibitor to the formation of dioxins. Does sulfur act as an inhibitor to the formation of dioxins and will the sulfur present in mustard (HD) act as an inhibitor for dioxin formation in the proposed incineration process for the UAD incinerators?

Yes, the presence of sulfur in sufficient quantities in a fuel inhibits dioxin formation, and yes, sulfur in mustard is likely to act as an inhibitor for dioxin formation during its incineration in the proposed plant.

The inhibiting effect of sulfur on the formation of dioxins has been confirmed by several studies. /1-6/ Both laboratory and full scale plants experiments have shown that the addition of sulfur decreases the formation of dioxins. The presence of sulfur in coal is believed to be the reason for negligible dioxin emissions in coal combustion.

The form in which the sulfur has been added in the experiments has been sulfur dioxide or sulfur in coal that has been added to municipal solid waste incinerators. During combustion all sulfur regardless of source is oxidized to sulfur dioxide. Thus the sulfur in the mustard gas will behave in exactly the same manner as sulfur dioxide added to the incinerators in the tests or sulfur in coal and the results are applicable to combustion of mustard in the incinerators.

Reductions in the formation of dioxin by factors of up to thousand have been measured. With the addition of coal there seems to be a critical sulfur to chlorine molar ratio above which the reduction is considerable but below which there is little reduction. With the addition of sulfur dioxide, there seems to be reduction regardless of the sulfur to chlorine ratio though the extent varies with the amount of sulfur added. In the tests with natural gas combustion that seem most applicable to the incinerator proposed here, two levels of sulfur to chlorine ratios were used: 0.64 and 1.34. At these levels the dioxin emissions were less than one tenth of those that were obtained without any sulfur in the gases./4/ In coal combustion tests the addition of sulfur dioxide to increase the sulfur to chlorine ratio from 0.36 to 0.78 decreased the dioxin and furan yields by a factor of ten. In another study sulfur to chlorine ratios as low as 0.1 were sufficient to reduce dioxin concentrations by a factor of one hundred./5/

The molar ratio of sulfur to chlorine in mustard agent HD is 0.69. It seems safe to assume that the sulfur in mustard inhibits dioxin formation. Reductions in the amount of dioxins by at least a factor of ten could be expected.

2. Chlorine and Dioxin Formation

a. Can dioxins be formed in a combustion process when chlorine is not an ingredient in the waste feed (i.e. chlorine in trace amounts as combustion air)?

Yes, any chlorine in the incinerator regardless of the source of the chlorine can contribute to dioxin formation. Even trace amounts of chlorine can lead to dioxin formation.

Laboratory and pilot scale studies done in well controlled conditions usually indicate that increasing the amount of chlorine by e.g. addition of hydrogen chloride increases the yield of dioxins/4,7-8/. Full scale studies on the other hand have failed to show any trends with the chlorine concentration./8-10/

The discrepancy between the two findings can be explained by the extreme complexity of the processes leading to dioxin formation. There are several routes for dioxin formation: *de novo* synthesis in which carbon in ash or soot reacts with chlorine to dioxin and formation via precursor mechanism in which chlorinated products of incomplete combustion are transformed to dioxins. Both may occur at short time scales in flight or over extended periods on deposits and other surfaces. Both are affected by the presence of several impurities.

Overall, factors other than the chlorine content are more important in setting the level of dioxin emissions during gas combustion in an incinerator./11-12/ The form at which chlorine is present in the flue gases is believed to influence dioxin formation more than the total amount of chlorine in the gas phase: elemental chlorine is more reactive than hydrogen chloride for dioxin formation./13/ During gas combustion factors such as sooting (formation of small particles consisting mainly of carbon) may have a greater impact on dioxin formation than the chlorine content./7,14/ Metals such as copper and iron catalyze dioxin formation, and the presence of them in the flue gases greatly increases dioxin formation./15-17/

In general the existing data on the effect of chlorine concentration can be concluded to imply that at relatively high concentrations of chlorine in the feed, of the order of percents, the dioxin emissions are independent of the chlorine content of the feed. At low chlorine concentrations at otherwise identical conditions an increase in the chlorine content may increase dioxin emissions. Factors other than the chlorine content have a greater impact on the formation of dioxins and it is impossible to predict dioxin concentrations solely based on the chlorine content of the feed.

It is important to bear in mind that the dioxin concentrations are so low that even minute amounts of chlorine may lead to substantial dioxin formation if the conditions are right. With a chlorine content of 1 ppb (0.0000001 volume %) in the flue gases and a conversion of one percent of the chlorine to dioxins we could produce more than 5 ng/m^3 of dioxin.

b. Because the UAD incinerators are natural gas fired, would one expect other natural gas fired combustion facilities such as the Co-Gen facilities in the area, to form dioxin if chlorine was not a key component? If so at what mass emission rate would dioxin be produced?

Yes, there may be formation of dioxins from the Co-Gen facilities due to trace impurities of chlorine in the combustion air or the natural gas. However, without measurements it is impossible to quantify the dioxin emissions. Generally, natural gas fired combustion facilities are deemed not to produce significant amounts of dioxins. Significant dioxin emissions could be defined for example as emissions above 1 ng/m³. Measurements in the literature have indicated, however, dioxin concentration well above 30 ng/m³ during gas combustion without other chlorine sources except impurities in the fuel and combustion air. These measurements come from small scale experimental facilities and they are probably not applicable to large scale applications such as the Co-Gen facility.

c. How would the dioxin mass emission rate for the UAD incinerators while operating on natural gas compare to when mustard (HD) is introduced into the incinerators versus not introduced into the incinerators? What is the dioxin reduction for the UAD incinerators if HD is not burned? In calculating the dioxin emissions, the calculations should include: start up, shut down, normal operations, and upset conditions.

Some increase in the dioxin emissions may occur when mustard is introduced in the incinerator compared to the incineration of the nerve agent VX. However, the emissions from the proposed system both with and without mustard addition are expected to be below 1 ng/m^3 and thus it is impossible to give an estimate for the increase. The emissions during start up or shut down or upset conditions are not either expected to exceed 30 ng/m³.

Mustard contains 41 % chlorine by weight which makes it seem like a strong candidate for dioxin formation. However, as stated in the answer for the first question it contains sulfur at a sulfur to chlorine molar ratio of 0.46, and sulfur inhibits dioxin formation. Based on studies in full scale plants there is no direct proportionality of dioxin formation with the input chlorine concentration, at least at high concentrations. Further, dioxin formation is normally greatly increased by the presence of certain metals, notably copper and iron. The concentrations of these metals are relatively low in mustard. This would make the dioxin emissions low when compared to e.g. incineration of municipal solid waste at similar chlorine concentrations. Overall the expectation is that despite the high chlorine content of mustard the dioxin emissions will be low.

The nerve agent GB contains 0.1 weight % hydrogen chloride as impurity. This makes the amount of chlorine in GB about one four hundredth of that in mustard. However, GB does not contain any significant amounts of sulfur. One way of comparing the emissions during combustion of mustard or GB is to assume that the dioxin emissions are directly proportional to the chlorine concentration until up to 1 weight % and that above this

concentration the dioxin emissions are independent of the input concentration. This seems a reasonable assumption based on the data available. Further, based on the data presented in the answer to the first question it is safe to assume that the sulfur in mustard decreases the dioxin emissions by at least a factor of ten. This would make the dioxin emissions during combustion of mustard the same as during destruction of GB.

The nerve agent VX does not contain any significant chlorine impurities. The chlorine source during VX incineration is then any trace impurity in the agent, natural gas or combustion air. In addition VX contains sulfur, at about half the concentration of that in mustard. These two factors make it likely that the dioxin emissions during destruction of VX in the incinerator are lower than during destruction of mustard.

The dioxin emissions from the proposed plant could be best estimated based on the trial burns at Johnston Atoll. Table 1 shows the reported dioxin and furan emissions during different sets of trial burns. Included in the table are only values that were actually detected. The results of the five sets with three to four experiments in each are shown. The values for each run in the sets as well as the average for each set is given.

Table 1. Sum of the detected concentrations of dioxins (PCDD) and furans (PCDF) in ng/m³ during the experiments at Johnston Atoll. LIC refers to liquid incinerator, DFS to deactivation furnace system, MPF to metal parts furnace, and DUN to dunnage furnace. Source: Appendix G (JADACS Emission Test Summaries and ANCDF Emission Estimates) of the Final SRA, RCRA Part B, RA No. 39-26-1399-95, Revision No. 1, 14 July 1995.

agent	run 1	run 2	run 3	run 4	average
HD, LIC	0.1	0.04	0.09	0.33	0.14
VX, LIC	0.06	0	0	0	0.01
GB, LIC	0.13	.02	0.18	-	0.13
VX, DFS	0.64	0.31	0.1	0	0.26
HD, MPF	0.18	0.04	,1.21	0.21	0.41
GB, DUN	7.25	6.97	4.02	7.66	6.47

The average emissions vary from 0.01 ng/m^3 for the liquid incinerator tests with VX to 6.5 ng/m^3 for the dunnage furnace tests with GB. The liquid incinerator test runs show the expected trends: higher and approximately equal emissions for mustard and GB and lower emissions for VX. The comparatively high emissions from the deactivation furnace with VX and the dunnage furnace with GB may seem surprising at first.

The source of chlorine in the VX experiments could be trace impurities in the combustion air or natural gas or the feed (energetics and small metals parts). Johnston Atoll is situated in the Pacific Ocean at a relatively warm climate. This makes the air contain considerable quantities of chlorine. This could raise the chlorine concentration to a level high enough to explain the dioxin formation. The feed to the deactivation furnace contains metals, and the flue gases contained higher concentrations of metals than those from the liquid furnace. The presence of metals in the flue gases enhances dioxin formation. This may easily explain the relatively high emissions from the deactivation furnace.

Another interesting feature in the data for VX destruction in the deactivation furnace is the decrease in dioxin concentration from experiment to experiment. It has been demonstrated that contamination of incinerators by soot or metals affects dioxin emissions and that the dioxin emissions may be slow to respond to changes in the feed conditions, e.g. changes in sulfur concentration./7,18/ Response times of several days have been reported. It is possible that there may have been some incident that had rendered the furnace highly active for dioxin formation and that the activity was slowly decreasing.

The GB that was added in the dunnage incineration test contains some chlorine. Thus the chlorine sources are GB and impurities in air and natural gases plus possibly in the waste. One difference between the dunnage furnace and the other incinerators is that the pollution abatement system contains no quench tower for quickly cooling the flue gases. Dioxin formation occurs at high rates only at temperatures in a relatively narrow range of 250-400°C. The longer residence times at these critical temperatures increases the formation of dioxin. The flue gases contained higher concentrations of metals than those in the liquid incinerator tests. In particular copper concentrations seem to have been high. As stated for the emissions from VX destruction in the metals parts furnace, metals, in particular copper, enhance the formation of dioxins. A further factor may be that the material burned in the dunnage incinerator includes wooden pallets and packing materials. They form ash, and ash also promotes the formation of dioxins. The concentrations of volatile products of incomplete combustion were also somewhat higher than those in the tests in the liquid incinerator. The combustion may not have been as complete as in the liquid incinerator. GB does not contain sulfur that would have inhibited dioxin formation. All of these factors contributed to the higher dioxin emissions even though the chlorine content of GB is low compared to mustard and the amount of the agent is smaller in the incinerator is smaller than in the liquid incinerator.

The data from the deactivation and dunnage furnaces clearly demonstrate that other factors are more important for dioxin formation than the concentration of chlorine in the feed.

The dioxin and furan emissions taking into account the detected amounts and undetected ones at the detection limit were all below 7 ng/m³, and with the exception of the dunnage furnace below 1.5 ng/m³. With the addition of carbon filters the emissions from the proposed Umatilla incinerator will be considerably lower than this. With the carbon filters it is possible to decrease the dioxin emissions by several orders of magnitude. Thus an estimate of actual emissions below 0.1 ng/m³ is reasonable and below 1 ng/m³ conservative.

The above applies to operation at normal considerations. The emissions during start-up, shut-down or upset conditions could be higher. However, with the safety procedures proposed for the plant I do not expect them to be exceed 30 ng/m^3 .

Some conditions that would increase the dioxin emissions include:

Improper combustion conditions in the incinerator. This would result in increased formation of products of incomplete combustion. In extreme cases dioxins could be formed in the incinerator. However, a more likely and greater effect of improper combustion is increased soot formation and the formation of precursors for dioxin formation. The presence of excess amounts of soot greatly increases the formation of dioxin. The proposed plant contains primary and secondary chambers or primary burners and afterburners for all incinerators to ensure proper combustion.

A good indicator for improper combustion conditions is the carbon monoxide level in the incinerator. If the carbon monoxide concentration exceeds 100 ppm in the incinerators the agent feeds to the furnaces will be cut off. The agent feed will also be cut off if the oxygen concentration becomes lower than 3 %, or if the temperature becomes lower than set values. Also if the combustion air pressure decreases below a set limit, the incinerators will be shut down. All of these precautions should ensure that proper combustion conditions are maintained and that there will not be increased dioxin emissions. Even if there were improper combustion conditions, the carbon filters still provide a buffer against increased concentrations of dioxin, and the dioxin emissions are not expected to exceed 30 ng/m³.

- Lack of cooling in the quench tower. If the cooling liquid flow to the quench towers decreases or ceases, the temperature of the flue gases may remain high. This would lead to increased exposure of the gases to temperatures in the window 250-400°C (480-750°F) that is critical for dioxin formation and thus increase dioxin emissions. All feed will stopped if the temperature of the gases leaving the quench tower exceed 250°F. This seems adequate for ensuring that no sustained temperatures above 480°F will be encountered. The carbon filters still provide extra security, and the emissions are not expected to exceed 30 ng/m³.
- Unavailability of a carbon filter. If the carbon filters were not operational the dioxin emissions would increase. In this case, the dioxin emissions are expected to be comparable to those measured at Johnston Atoll and they would still be below the limit 30 ng/m³. There are two spare carbon filters that are common to all of the incineration units. This should be adequate for ensuring that the gases can be switched over to one of them in case of an unavailability of a filter.
- Formation of hot spots in the filter. The formation of hot spots may cause fires and release of adsorbed dioxins from the filter. The carbon monoxide concentrations before and after the carbon filters are measured and used as an indication of possible hot spots in the filters. The carbon filters are also taken off line if the temperature of the inlet gas exceeds 130°F.

All of the precautions seem adequate to ensure that the dioxin emissions during upset conditions do not exceed 30 ng/m^3 .

3. Combustion technology and dioxin.

a. What is considered state of the art design technology for preventing dioxin formation in a combustion process?

Most of the dioxin formation occurs at the low temperatures downstream of the combustion chambers at temperatures 250-400°C. Hence the incineration technology is not nearly as crucial as the design of the pollution abatement system for formation of dioxin. As long as conditions are maintained for destruction of the agents at the desired level the design of the incinerator in not crucial.

For proper combustion a sufficient residence time at high temperatures with good mixing is required. Non-proper conditions increase the formation of products of incomplete combustion. This includes formation of precursors for dioxin formation or dioxin itself though the latter is usually not of great importance. Further, improper combustion produces soot. The formation of dioxins increases considerably when the combustion produces higher amounts of soot.

- 4. Pollution Control Technology and Dioxin
- a. What are the essential design elements of a pollution abatement system for controlling dioxin emissions from a combustion process?

The essential elements of a pollution abatement system for controlling dioxin emissions from combustion processes are: a) rapid cooling of the gases in a quench system to prevent dioxin formation and b) adsorption of dioxin once it has been formed. Both of these processes are employed here, the former as quench towers for the liquid incinerators, deactivations furnaces and metal parts furnaces and the latter as the carbon filters for all of the systems. Due to the low concentration of the agents in the dunnage furnace the dioxin emissions are expected to be lower than from the other furnaces, and no quench cooling is provided for this stream.

In principle there are two different ways of addressing the minimization of dioxin emissions. The first is to prevent the formation of dioxin and the second is destruction or removal of dioxin once it has been formed.

The formation of dioxin occurs in a relatively narrow temperature window of 250-400°C. Above 400°C and below 250°C the net rates of dioxin formation are negligible. The minimization of the exposure to these temperatures is one of the most efficient methods of preventing dioxin formation. By this method the formation of dioxins is easily decreased by factors of ten to hundred./19/ Other suggested methods for the prevention of dioxin formation include the removal of precursors of dioxin formation. An example is the removal of hydrogen chloride by use of limestone./20/

The addition of compounds containing sulfur to inhibit dioxin formation has been suggested and demonstrated as well. Good results have been obtained with the addition of high sulfur coal or lignite to municipal solid waste incinerators/3/ Mustard and the agent VX have high sulfur contents and sulfur is naturally present in the incinerators in these cases.

Several methods have been developed for removal of dioxin. Activated carbon is the most common candidate for adsorption of dioxin. The injection of activated carbon as a final step to remove dioxin emissions after scrubbers is used extensively in Europe. In this method activated carbon or a mixture of carbon with limestone is injected into flue gases after scrubbers or other flue gas cleaning equipment. The carbon is then captured in fabric filters. Some of the removal of the dioxin occurs in flight on the activated carbon particles, the rest on the activated carbon collected on the filters. Removal efficiencies of more than 95 % and emissions below 5 ng/m³ are easily achieved.

Another way of using activated carbon for the capture of dioxin are static or dynamic carbon filter beds. The flue gases are led through beds of activated carbon and dioxin and other impurities are adsorbed onto the carbon granules. This is the method chosen for the Umatilla facility. The efficiency of the carbon filters depends on the quality of the activated carbon. With a proper selection of this very high reduction efficiencies can be obtained. The efficiency of activated carbon filters is unsurpassed by other methods. An activated carbon filter used in the incineration of solid radioactive waste in Germany was reported to decrease the dioxin emissions by factors ranging from 250 to 5700 with an average reduction by a factor of 1700 in nine tests/23/. These correspond to reduction efficiencies of 99.6 to 99.98 %.

The activated carbon filters have two distinct advantages. The use of activated carbon in method gives the ability to simultaneously reduce the concentrations of other pollutants as well. Thus they offer added security against accidental releases of the agents or other products of incomplete combustion. Another benefit of using carbon filters is that they contain large quantities of the filter bed material. This offers buffering capacity in cases of accidental high concentrations of pollutants, whether they are dioxins or agents. This feature is unique to the carbon beds.

The use of activated carbon together with limestone in the equipment for sulfur dioxide removal has been proposed. The ability of dry, semi-dry and wet processes to reduce the toxic equivalent to values of less than 0.1 ng/m^3 has been demonstrated in Europe./21/ A disadvantage of these methods is that the wastes are mixtures of the carbon that has been contaminated by dioxins and other pollutants together with the limestone and possibly ash from the combustion process. The disposal of the waste mixture creates a problem.

Mixtures of sodiumbicarbonate and carbon have been used as well in the dry method with good success./22/

Several other methods for the reduction of dioxin emissions are being developed./24/An example is the application of selective catalytic reduction for oxidation of dioxin. The selective catalytic reduction is used for nitrogen oxides removal. High destruction efficiencies can be obtained if the temperature in the catalyst is high enough. /21,25/ Other catalysts for dioxin oxidation are being developed as well.

In many cases the methods of reducing the amount of dioxin formation may be sufficient for achieving low dioxin concentrations. With high dioxin emissions, removal or destruction of dioxin is needed as well.

5. Design of the carbon filters and best available control technology. My opinion on the pollution abatement system (PAS) carbon filter design and comment as to the carbon filter system applicability as being the best available technology for incineration design was asked.

As expressed in the answer to the fourth question, activated carbon filters together with rapid quenching of the flue gases is the most efficient methods of reducing dioxin emissions. No other method seems to be able to offer higher reduction efficiencies. The carbon filters have the advantage of being able to reduce concentrations of other pollutants as well and of offering added security against accidental high releases during upset conditions.

The use of carbon filters contains some risks. There is a possibility for the formation of local hot spots that could lead to fires and release of the adsorbed compounds from the carbon. Also, condensation of water in the filters might render the filters unusable. The preventive actions proposed for the carbon filters at the Umatilla facility seem adequate for reducing the risks associated with the use of the carbon filters.

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Environmental Quality Commission

- Rule Adoption Item
- Action Item
- ☐ Information Item

Agenda Item <u>C</u> June (c), 1997 Meeting

Title:

Petition for Reconsideration: Umatilla Chemical Demilitarization Facility Permits

Summary:

On February 12, 1997, the Commission and the Department issued a hazardous waste treatment and storage permit and an air contaminant discharge permit to the United States Army for the construction and operation of a hazardous waste incineration facility at the Umatilla Chemical Depot. In accordance with ORS 183.484(2), the Commission received a Petition for Reconsideration filed by the Sierra Club, G.A.S.P. (a local organization), and the Oregon Wildlife Federation on April 14, 1997.

In accordance with the Statute, if the Commission does not otherwise act, the Petition with respect to the hazardous waste permit shall be deemed denied on the 60th day after April 14, 1997 (i.e., June 13, 1997). With respect to the air contaminant discharge permit, the Petition is in the jurisdiction of the Department, even though the Petition was served only to the Commission.

Department Recommendation:

The Department recommends that the Commission deny the Petition for Reconsideration regarding the hazardous waste permit and determine that it has no jurisdiction regarding the portion of the Petition relating to the air permit and transfer that matter to the Director for disposition.

<u>Sue Oliver</u>

Report Author

Division Administrator

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

Date: May 8, 1997

То:	Environmental Quality Commission
From:	Langdon Marsh, Director
Subject:	Agenda Item [C] , EQC Meeting June 6, 1997 Petition for Reconsideration: Umatilla Chemical Demilitarization Facility Permits

Statement of Purpose

The purpose of this staff report is to present to the Environmental Quality Commission (Commission) the results of the Department's review of the Petition for Reconsideration (Petition) filed on April 14, 1997, and the Department's recommendation for disposition of this Petition.

Background

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On February 12, 1997, the Commission and the Department issued a hazardous waste treatment and storage permit (OR6 213 820 917) and an air contaminant discharge permit (25-0024) to the United States Army for the construction and operation of a hazardous waste incineration facility to be located at the Umatilla Chemical Depot. The Umatilla Chemical Demilitarization Facility (UMCDF) will be used to destroy the chemical weapons stored at the Depot. On April 14, 1997, the Commission received a Petition for Reconsideration filed by the Sierra Club, G.A.S.P., and the Oregon Wildlife Federation (Petitioners).

Authority of the Commission and Department with Respect to the Issue

Oregon Revised Statute 183.484(2) allows for the filing of a petition for reconsideration of a final order in other than a contested case with the agency within 60 days after the date of the order.

The Petition was filed before the Commission to reconsider both the hazardous waste and air contaminant discharge permits. The air contaminant discharge permit was solely issued by the Department, and therefore a petition for reconsideration would be correctly brought before the Department. The Department is treating the Petition as being brought before the Department in matters of the air contaminant discharge permit.

Alternatives and Evaluation

The Commission and Department may grant or deny the petition by summary order. If the Commission and Department takes no action within 60 days (in this case, by June 14, 1997) the petition shall be deemed denied in accordance with Oregon Revised Statute 183.484(2).

Summary of Public Input Opportunity

The public comment period for the draft hazardous waste and air contaminant discharge permits was held open for over seven months (April 5, 1996 through November 16, 1996). The Department has not solicited public comment on the Petition for Reconsideration filed on April 14, 1997, although the Department did send a notification to persons on the Umatilla mailing list that the matter was to be considered by the Commission on June 6, 1997.

Discussion and Conclusions

The Petition {Attachment A, Section IV(A), IV(B), and IV(C)} asks that the Commission void its approval of the hazardous waste permit because the Petitioners claim that the permittee has no intention of constructing the carbon filters or the brine reduction area as part of the UMCDF pollution abatement system. The Petitioners also claim that the permittee does not intend to build the dunnage incinerator. The public record (Record), which contains written public comments and testimony given before the Commission, contains a description of the permittee's agreement to install the carbon filters at the UMCDF. The Record also contains a discussion of the use of the dunnage incinerator and the brine reduction units. No substantial new evidence nor perspectives are provided in the Petition to warrant voiding the Commission's earlier decision.

The Petition {Section IV(D)} states that the Commission's reliance on the pre-trial burn human health and ecological risk assessment (HHRA) requires reconsideration of the permit decision because the permittee has failed to fully characterize the hazardous wastes that will be incinerated. The Petition also states that the HHRA failed to consider important sources and routes of exposure, sensitive sub-populations, impacts from other facilities, synergistic effects, non-cancer health effects, current levels of background contamination, or the impacts posed by non-lethal levels of nerve agents. The Department is aware of the petitioner's concerns about the currently accepted methodology for human health risk assessment. The Department specifically addressed these issues in the Department's July 11, 1996 testimony and report to the Commission titled <u>Response to Risk Assessment Issues.</u>¹ The testimony and report concluded that the combination of the conservative assumptions used in the risk assessment and the risk assessment methodology using good science resulted in a very conservative final result. The requirement for waste analysis,

¹ Regina Skarzinskas et al., <u>DEQ and Ecology & Environment Response to Risk Assessment Issues</u>, Umatilla administrative index no. 1817, July 11, 1996.

including agent purity, is explicitly stated in the permit. The Record contains a discussion of both of these issues. No substantial new evidence nor perspectives are provided in the Petition to warrant voiding the Commission's earlier decision.

The Petition {Section IV(E)} requests reconsideration of the Umatilla permit because the Commission did not consider "solvated electron chemistry" in its analysis of Best Available Technology. The Department did evaluate solvated electron chemistry as part of the Best Available Technology review, but the technology was not mature enough at the time to provide sufficient information on which to base an evaluation. However, the Record does contains a description of solvated electron chemistry that was reviewed by the Commission. No substantial new evidence nor perspectives are provided in the Petition to warrant voiding the Commission's earlier decision.

The Petition {Section IV(F)}requests that the Commission re-open the record concerning the compliance history of the permittee because of issues that have been raised since the close of the Umatilla comment period with respect to the demilitarization facility in Tooele, Utah. The Department followed the developments in Tooele, to include the safety allegations brought by former employees and the court cases filed by the Chemical Weapons Working Group, et al.. Allegations raised by Steve Jones about the Tooele facility were provided to the Commission during the comment period. Allegations raised by Gary Millar were provided to the Commission after the close of the formal comment period, but before the Commission's teleconference on February 7, 1997.

The Department has reviewed transcripts from the sworn testimony of Don Smith, John Hall, and James DeHaven and has concluded that there is not sufficient evidence to warrant voiding the Commission's earlier decision. Although not binding on the Commission, the United States District Court for the District of Utah (Central Division) recently found in favor of continuing the operations at the Tooele demilitarization facility. The Memorandum Decision and Order from the Utah District Court (Chemical Weapons Working Group, Inc., et al., v. United States Department of the Army, et al.) is included as Attachment B.

The Petition {Section IV(G)} claims that stack emissions of chemical agents from the Umatilla facility into the navigable waters of the United States will violate the federal Clean Water Act. Operation of the UMCDF is not expected to violate applicable state water regulations. Although not binding on this Commission, the United States Court of Appeals (Tenth Circuit) rejected the applicability of the Clean Water Act to stack emissions at Tooele when it upheld the Utah District Court's first denial of a motion by the Chemical Weapons Working Group, et al., to stop operations at the Tooele facility. A copy of the decision by the Tenth Circuit Court of Appeals is included as Attachment C.

The Petition {Section IV(H)} claims that the Umatilla incineration facility will cause air pollution in violation of Oregon's air quality law. The Department has concluded that the UMCDF will meet all applicable air emission standards. The Department will continue to conduct

compliance activities to ensure that the permittee meets the requirements of both the hazardous waste and the air permits.

Intended Future Actions

Unless directed by the Commission, the Department does not intend any further action on this Petition for Reconsideration. The Department will continue to monitor events at other chemical stockpile disposal sites that potentially affect the Umatilla facility, and will continue with compliance oversight of the construction of the facility.

Department Recommendation

Except as noted above, the Petitioners did not present any information that had not already been provided in oral testimony or written documents (to the Department and/or the Commission) and used during the consideration of the original decision. In the matter of reconsideration of the air contaminant discharge permit, the Department will defer the decision until the Commission has ruled on the hazardous waste permit.

The Department recommends that the Commission deny the Petition for Reconsideration regarding the hazardous waste permit and determine that it has no jurisdiction regarding the portion of the Petition relating to the air permit and transfer that matter to the Director for disposition.

Attachments

Attachment A:	Petition for Reconsideration filed April 14, 1997, by the Sierra Club GASP, and the Oregon Wildlife Federation.
Attachment B:	Memorandum Decision and Order, Civil No. 2:96-CV-425C, United States District Court for the District of Utah, March 24, 1997 (Chemical Weapons Working Group, Inc., et al., v. United States Department of the Army, et al.).
Attachment C:	Appeal From the United States District Court for the District of Utah, United States Court of Appeals, Tenth Circuit, No. 96-4166, April 22, 1997 (Chemical Weapons Working Group, Inc., et al., v. United States Department of the Army, et al.).

Approved:

Section:

Breth Metings Acting DA. Steel Division:

Report Prepared By: Sue Oliver

Phone: 541-567-8297

Date Prepared: April 28, 1997

ATTACHMENT A

PETITION FOR RECONSIDERATION Filed April 14, 1997

State of Oregon Department of Environmental Quality

STATE OF OREGON . BEFORE THE ENVIRONMENTAL QUALITY COMM

IN THE MATTER OF:

AND

NICHAIA E CONAIC

OFFICE OF THE DIRECTOR

U.S. ARMY UMATILLA CHEMICAL DEPOT

PERMIT FOR THE TREATMENT AND STORAGE OF HAZARDOUS WASTE;

EPA I.D. # OR6 213 820 917

AIR CONTAMINANT DISCHARGE PERMIT

PERMIT # 25-0024

PETITION FOR RECONSIDERATION

I. INTRODUCTION

Pursuant to Oregon Administrative Rule (OAR) 137-04-080,¹ the Sierra Club, GASP; and the Oregon Wildlife Federation (Petitioners) request that the Oregon Environmental Quality Commission (EQC or Commission) reconsider and revoke, rescind, or modify its decisions to approve 1) the Umatilla Chemical Depot Facility's (UCDF) permit for the storage and treatment of hazardous wastes, 2) UCDF's air contaminant discharge permit, 3) the human health and ecological risk assessments performed to evaluate the risks posed by the proposed incinerator, and 4) the evaluation of the best available technology (BAT) for the chemical warfare agent stockpile stored at UCDF. Petitioners further request a public hearing before the EQC wherein the issues raised in this petition are addressed and full

¹ Oregon Revised Statutes (ORS) 183.484(2) recognizes that petitions for rehearing or reconsideration may be filed before an agency.

public participation in the Commissions' deliberations are permitted. Such a meeting should be provided with at least thirty days (30) notice to Petitioners and their representatives.

Petitioners expect that the Commission will advise them of its decision on the issues raised herein within sixty (60) days, by Friday, June 13, 1997. ORS 183.484(2) notes that petitions for reconsideration not acted upon within sixty (60) days will be deemed denied.

II. WHO ARE THE PETITIONERS?

Petitioners are membership organizations that seek to protect the environment and human health from unnecessary contamination or destruction. Each organization has members directly impacted by the Commissions' decisions regarding the UCDF incinerator.

A. Sierra Club

The Sierra Club is a national organization with approximately 500,000 members throughout the United States. The Oregon Chapter of the Sierra Club has members in close proximity to the UCDF, including a number of members who reside in the response zone. The Oregon Chapter has been involved in activities designed to inform the Commission about the serious impacts of the UCDF incinerator. See, e.g., testimony of Bob Palzer, Ph.D before the Commission on November 15, 1996.

B. G.A.S.P.

G.A.S.P. is a local organization based in the Umatilla County area. Its members live in close proximity to the proposed UCDF incinerator site with several members living within the emergency

The NRC had previously noted that "[a]lthough the filters might reduce some nonagent emissions and could provide additional protection against plant upsets, the filters might also create additional risks if they caught fire, for example." Review of Systemization of the Tooele Chemical Agent Disposal Facility, National Academy Press, 1996, at 27.

By January, 1997, the Army made it clear that it did not intend to use carbon filters as part of the PAS on any of the planned incinerators. "The Army does not expect to install the system at TOCDF [Tooele] ... PM-CD has also performed a value engineering review of the PFS [PAS filter system]. This review identified design and operational changes that will save a total of \$55 million for the remaining sites." Interim Status Assessment '97 at 4-24. As an afterthought, the Army does note that it "will proceed toward the installation of the PFS at each site unless the site-specific evaluation shows that it does not provide a measurable reduction in risk." Interim Status Assessment '97 at 4-This statement is perceived by Petitioners as a thinly veiled 25. attempt to maintain momentum in the permit approval process rather than an honest statement of intent to provide additional pollution control equipment.

The reality is that the Army has known for some time that the incineration systems it operates and proposes to operate cannot effectively and safely implement carbon filter technology. Although the carbon filter technology could reduce the emissions of agent, dioxin, dioxin-like chemicals, and the sulfur analogs of

sufficiently limiting such operations to ensure protection.

IV. SPECIFIC ISSUES WARRANTING RECONSIDERATION

In support of this request for reconsideration, Petitioners rely on and incorporate by reference here the following: 1) previous comments by GASP, Susan Jones or Karyn Jones; 2) previous comments by Sierra Club and Bob Palzer; 3) previous comments by GreenLaw and Mick Harrison; 4) previous comments by Dr. Mary O'Brien; and 5) previous comments by Confederated Tribes of the Umatilla Indian Reservation. The issues Petitioners request the Commission to focus on are detailed below.

A. The Commission's Approval of the Hazardous Waste Permit for UCDF Must be Voided and Reconsidered Because the Army has no Intention of Constructing an Incinerator that uses Carbon Filters as Part of the Pollution Abatement System

In its best available technology (BAT) analysis the Commission relied upon the Army's permit application materials asserting that carbon filters would be added to the pollution abatement system (PAS) in order to further reduce emissions of toxins. Findings and Conclusions of the Commission and Order (Order) at 19. However, documents prepared by the U.S. Department of Defense (DOD) and the National Research Council (NRC) make clear that the addition of carbon filters to the incineration systems proposed and used by the Army could be dangerous and costly. Consequently, the Army "has decided to postpone the demonstration test and future site PFS [PAS filter system] construction and instead further evaluate the PFS." DOD Interim Status Assessment for the Chemical Demilitarization Program, April 15, 1996, at 4-11 (Interim Status Assessment '96).

requirements.

Oregon regulations provide additional guidance regarding the application of the best available technology standard to the proposed UCDF incinerator.

The facility shall use the best technology as determined by the Department for treatment and disposal of hazardous waste and PCB. The facility shall use the highest and best practicable treatment and/or control as determined by the Department to protect public health and safety and the environment.

OAR 340-120-010(2)(c). See, also, OAR 340-120-001(1). If the Army cannot demonstrate that these criteria will be met, then the permit must be denied.

In addition to the best technology requirements, the Commission must also ensure that UCDF meets the General Facility Standards established by state and federal law or regulations. 40 C.F.R. Part 264, Subparts A - H. Similarly, the Commission must ensure that UCDF meets specific requirements for hazardous waste incinerators. 40 C.F.R. Part 264, Subpart O.

One of the most critical requirements mandates that UCDF incinerator "shall be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden discharge of hazardous waste or hazardous waste constituents to air, soil, groundwater, or surface water which could threaten the environment or human health." 40 C.F.R. § 264.31. The most important words in this requirement are: "could threaten the environment or human health." This phrase ans that the Commission has a duty to <u>prevent</u> injury to the environment or human health by denying authorization to operate or

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(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

(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 466.055. Many of these standards go beyond or supplement EPA

protect public health and the environment. 42 U.S.C. 6925(c); 40 C.F.R. 270.32(b); <u>In the Matter of Ecolotec, Inc.</u>, RCRA Appeal No. 87-14 (Remand Order 12/14/88).

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The EPA has made it clear that hazardous waste permitting decisions are solely focused on protection of public health and the environment.

Section 3005(c) [42 U.S.C. § 6925(c)] provides that each RCRA permit issued under section 3005 shall contain such terms as the Administrator [or the State] deems necessary to protect human health and the environment. The Congressional intent underlying this amendment is to authorize the Agency to impose permit conditions beyond those mandated by the regulations, such as new or better technologies or other requirements. S. Rep. No. 284, 98th Cong., 1st Sess. 31 (1983). The purpose is to upgrade facility requirements in order to protect human health and the environment. The Agency believes the authority to issue permits containing conditions deemed necessary to protect human health and the environment must encompass the authority to <u>deny</u> permits where necessary to afford such protection.

50 Fed. Reg. 28,723 (July 15, 1985) (emphasis in original). Thus, in <u>Ecolotec</u> the EPA Administrator reasoned that "[m]ere technical compliance with the existing location, design, and operational standards is not ... sufficient to justify permit issuance if human health and the environment cannot be adequately protected." <u>Ecolotec</u>, at 8.

Of course, Oregon has taken some steps within its hazardous waste regulatory program to ensure protection of public health and the environment. For example, Oregon law requires the following:

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:

response zone. G.A.S.P. has provided formal comments to this Commission and the Army regarding its concerns about the proposed incinerator. Members like Karyn Jones have also provided comments to the Army and Commission.

C. Oregon Wildlife Federation

The Oregon Wildlife Federation (ORF) was founded in 1936. Of ORF's 500 members, several reside near the UCDF. ORF is an organization dedicated to preserving, protecting and restoring wildlife and wildlife habitats throughout Oregon.

III. LEGAL AND REGULATORY FRAMEWORK

Prior to approving any hazardous waste facility, DEQ and/or the U.S. Environmental Protection Agency (EPA) must insure compliance with the federal Resource Conservation and Recovery Act (RCRA), RCRA regulations, the federal Toxic Substances Control Act (TSCA), TSCA regulations, Oregon Revised Statutes regarding hazardous waste facilities, Oregon Air Quality and Water Quality statutes, and the corresponding Oregon Administrative Rules. Given the unique nature of the treatment, storage, and disposal of chemical warfare agents, the U.S. Army is also required to meet certain statutory and regulatory standards. <u>See, e.g.,</u> 50 U.S.C. 1521(k).

In order for the Commission to approve permits authorizing construction of an incinerator facility for the purposes of treating, storing, and disposing of chemical warfare agents, PCBs, and the expected toxic and hazardous byproducts, it must be sure that the facility can be operated so that it will adequately

dioxins and furans, and possibly other toxins, the Army has failed to complete the necessary verification testing of a PFS. Operational verification testing (OVT) is required <u>prior</u> to installation of new systems on incinerators in the continental United States. <u>See</u>, 50 U.S.C. § 1521(k).

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Since the Army has failed or refused to demonstrate that carbon filters can be added to the UCDF incinerator PAS, the Commission must re-evaluate the Army's permit application without considering the use of carbon filters. Moreover, the revised UCDF incinerator system (without carbon filters) must be compared with current information on other treatment technologies in order to comply with Oregon's BAT requirement.

B. The Commission's Approval of the Hazardous Waste Permit for UCDF Must be Voided and Reconsidered Because the Army is not Likely to be able to Include a Brine Reduction Area (BRA) as Part of the Pollution Abatement System

At present, the brine reduction area (BRA) is not operational at the Tooele Chemical Demilitarization Facility (TOCDF). Transcript of testimony of Army Project Director Tim Thomas before U.S. District Court in Utah, March 3, 1997, at 30 (FED. TR.). Operation and permit compliance of the BRA at JACADS was not demonstrated fully during OVT. The BRA did not function properly during OVT1 and OVT2, leading to large quantities of brine wastes to be handled, stored, and disposed of by shipping to the U.S. Approximately 3.4 million pounds of brine from OVT1 and OVT2 had to be shipped off-site. Tank and other overflows of the brine wastes also occurred. 1993 Mitre OVT Report at 3-6, 4-28 - 4-29 & C-14.

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The inability of the Army to get the BRA on-line at TOCDF has resulted in the need to dispose of wastes off-site. The Commission should anticipate that the BRA as planned by the Army will not function, requiring disposal of wastes that would have been treated by the BRA at other facilities. This change significantly alters the make-up of the proposed facility and requires additional risk analyses that consider the disposal activities absent the BRA.

C. The Commission's Approval of the Hazardous Waste Permit for UCDF Must be Voided and Reconsidered Because the Army is not Likely to be able to Include a Dunnage Incinerator as Stated in the Permit Application

At JACADS the MITRE report found that operation and permit compliance of the DUN incinerator was not demonstrated fully during OVT.² As a result, dunnage was disposed of by open burning, by landfill and by continued storage at Johnston Island.³

The Dunnage Incinerator (DUN) and Brine Reduction Area (BRA) were not able to sustain full operations during OVT. The changes in OVT for the DUN and BRA are discussed in [a later section of the report].

"Required Report for the Operational Verification Tests, Tooele Chemical Agent Disposal Facility, Resource Conservation and Recovery Act Permit," Program Manager for Chemical Demilitarization (October 1993), at 2-1.

³ Id. at 3-16, 4-28 - 4-29. The Secretary of Defense nevertheless issued the OVT certificate without OVT compliance of the DUN and BRA. This results in the bizarre account in the March 1995 report describing the results of the December 5-8, 1994 agent trial burn at the JACADS Dunnage incinerator, <u>after</u> the Secretary of Defense submitted an OVT certification to Congress on August 24, 1993. The Report stated as follows:

The Army <u>has scheduled</u> operational verification testing (continued...)

² The Army also admitted the OVT failure of the DUN incinerator and the Brine Reduction Area to the State:

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Similarly, although the Army claims the dunnage incinerator can be operated, it has not been operated or permitted for agent operations at TOCDF. FED. TR. at 120 - 122. It is likely that a dunnage incinerator will never come on line at TOCDF and the Commission should assume that a dunnage incinerator will not be operational at UCDF. The absence of a dunnage incinerator would significantly change waste disposal activities and alter risk analyses.

D. The Commission's Reliance on the Pre-trial Burn Human Health and Ecological Risk Assessments Requires Reconsideration of the Decision to Permit UCDF

The Commission specifically relied upon the risk assessment work performed by the contractor Ecology and Environment, Inc. and submitted in April, 1996. Based on this work the Commission concluded that "there would be no adverse effects on either public health or the environment from the operations of the Umatilla

"RCRA Trial Burn Report for Agent,GB/Dunnage in the Dunnage Incinerator at the Johnston Atoll Chemical Agent Disposal System" Prepared by Raytheon Engineers & Constructors, Inc. for Program Manager Chemical Demilitarization, (March 1995) (Ex. 60) (Emphasis added). The TOCDF is not the CAMDS facility referenced in the letter. The CAMDS facility is a separate research and development facility. The requirement of OVT prior to the start of chemical agent disposal does apply to the TOCDF. Clearly, OVT could not have been completed in August 1993 when additional OVT testing was being conducted in December 1994.

³(...continued)

⁽OVT) at the JACADS facility. The completion of the OVT at Johnston Atoll is pivotal because, by Congressional Order, no chemical-agent disposal may be conducted at any storage facility except the Chemical Agent Munitions Disposal System (CAMDS) located at Tooele Army Depot in Tooele, Utah, until the completion of the performance evaluation at Johnston Atoll.

incinerator facility." Order at 10. However, as a threshold matter, the risk assessments do not support such a sweeping and optimistic statement. Based on the flawed assumptions used, the human health risk assessment (HHRA) cautiously concluded that "the risks to current populations were less than the regulatory benchmarks ..." HHRA at 4-34. This statement acknowledges that some persons living in the areas exposed to UCDF incinerator emissions will be exposed to toxic chemicals. If the exposed persons are developing fetuses, infants, the elderly, or living a subsistence life style, then there will be adverse health effects. The HHRA concludes by promising that after the incinerator is built and test-burned then the risk assessment process "will incorporate local demographic information to more accurately define risk estimates associated with UMCDF." HHRA at 4-35.

Similarly, the screening level ecological risk assessment (SLERA) concludes that there is "a low likelihood of potential ecological effects." SLERA at 5-32. However, the SLERA goes on to correctly point out that there are significant data gaps and that following the trial burn a more detailed assessment should be performed to include exposure and toxicity assessments and a risk characterization for mammals and birds. SLERA at 5-32.

In sum, neither assessment concludes that there will be no adverse impacts. Such a broad conclusion cannot be drawn from the assessments done and the data considered.

Moreover, the risk assessment process utilized by Oregon fails on a very basic level to provide any assurance that the Commission

can make a decision consistent with Oregon law and fully protect human health and the environment. For example, the risk assessment process employed by Oregon is a phased approach that begins with a screening level assessment followed by a fuller, more site-specific risk assessment. This process (which is used by many regulators) severely prejudices the outcome of risk evaluations in favor of the applicant. Such prejudice is created because the screening level assessment uses default values, non-site specific data, and ignores areas of risk not specifically addressed in guidance documents.* When the screening level risk calculation rises above regulatory standards, then the risk assessor or agency simply approve the permit (or other regulatory action), despite the calculated risks, claiming that the numbers are unrealistically high. For example, the HHRA states: "[b]ecause numerous conservative assumptions were used in the entire PreRA, the risk characterization results likely overestimate risks associated with the COPCs [constituents of potential concern] associated with the proposed facility." HHRA at 4-34.

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But what if the so-called conservative assumptions are not focused on the most critical risk factors? Or, what if the assumptions are simply wrong? In most cases industry or government sponsored risk assessors face these problems by hiding behind EPA

⁴ For example, the HHRA does not use local meteorological data. One of the significant meteorological characteristics of the Umatilla area are the extreme air inversions resulting in significant periods of stagnation. There is no reason why such data could not be acquired and utilized prior to construction of the incinerator.

or State risk assessment guidance. Rigid obedience to guidance documents does not usually resolve the public health or environmental issue being raised, and does not relieve the decision-maker from strict legal requirements mandating protection of human health and the environment.

Following this approach, the Commission has assumed the risks associated with the UCDF incinerator are negligible resulting in permit approval. The Commission and risk assessors take comfort in the false assumption that a more complete risk assessment after the facility is constructed and tested will provide a meaningful second decision point that will ensure protection of human health and the environment. However, there is no need to bias the process by permitting construction before evaluating as much risk related data as possible.⁵ The only pieces of information that are added to the risk equation following construction are test burn data. Carefully controlled test burn data provide an unrealistic and overly optimistic view of facility operations. In any case, such data are available from similar facilities (e.g., JACADS, CAMDS, and TOCDF).

Petitioners view the risk assessments relied upon by the Commission as seriously flawed. Upon reconsideration of the permit decision, these flaws could be resolved by performing a more site specific risk assessment <u>before</u> millions of dollars in funds and

⁵ A good example of such post-construction bias is provided in the case involving the WTI hazardous waste incinerator in East Liverpool, Ohio. This case has been the subject of extensive public criticism and makes clear the bias favoring newly constructed facilities. <u>See</u>, Ashley C. Schannauer, "RCRA Endangerment Actions: Is a Permit a Defense," 21 Col. Jour. Env. Law 287 - 360 (1996).

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other resources are consumed in building a facility that is simply too dangerous to operate. Petitioners request that such a risk assessment be performed with full public participation and include a comparative analysis of technologies other than incineration.

The specific flaws in the risk assessment that Petitioners wish to bring to the Commission's attention are described below. These issues supplement the comments noted previously which addressed the risk assessment.

(1) The Army has failed to fully characterize the hazardous wastes that will be incinerated at UCDF

In recent hearings regarding TOCDF, Utah officials and an Army official admitted that chemical warfare agents contained in the stockpiled munitions may have a substantial amount of degradation byproducts. One sample that was tested demonstrated that more than forty percent (40%) of the sample was byproduct material. Testimony before the Utah Solid & Hazardous Waste Control Board (BRD. TR.) at 256, 426 - 430. When asked if he knew the chemical composition of what was fed to the TOCDF liquid incinerator, the Army's project manager replied: "We have a good idea what it is, but we cannot precisely state what it is." FED. TR. at 111 - 112.

This lack of analysis demonstrates that the Army is unaware of the composition of the waste feed at TOCDF and is likely unaware of the waste feed composition at UCDF. Without knowing the chemicals involved, the risk assessors cannot calculate the toxicity of the emissions or the products of incomplete combustion (PICs) that will result when these chemicals are burned.

Similarly, the Army has failed to perform studies to determine the likely PICs created when chemical agents are burned. This missing data prevents accurate risk assessment.⁶

(2) The HHRA failed to consider important sources and routes of exposure

The HHRA does not consider the consumption of eggs, poultry, pork, wild game, or breast milk. HHRA at 4-6 to 4-7. These are significant sources of indirect exposure.

The HHRA also fails to consider exposure through consumption of processed foods. At least two food processing facilities operate within the response zone. The Lamb-Weston facility obtains more than ninety percent (90%) of the potatoes it processes from Umatilla and Morrow counties in Oregon and Benton County in Washington. The facility produces 550 million tons of finished potato product each year. The processed potatoes are distributed throughout the country.

Similarly, Hermiston Foods processes more than sixty (60) million pounds of finished canned vegetables per year. Most of the vegetables used are grown in Umatilla county.

(3) The HHRA fails to consider sensitive subpopulations

The HHRA did not evaluate the impacts of UCDF incinerator emissions on developing fetuses, infants, persons with compromised immune systems or other illnesses, or elderly persons. These populations are likely to be more significantly impacted by smaller

⁶ An important and related issue is consideration of the impact of fugitive emissions. Fugitive emissions do not appear to be considered in the HHRA.

doses of chemicals emitted by the UCDF incinerator.

In addition, the subsistence scenarios considered in the HHRA did not include a developing fetus, an infant, or children. HHRA at 4-4. The failure to include these sensitive persons in the subsistence scenarios results in non-conservative assessment of risk.

In Utah the DEQ's risk assessment contractor calculated a dioxin dose to the breast-feeding infant of a farmer of 50 pg/km/day dioxin toxic equivalents. <u>See</u>, January 1996 Draft Risk Assessment for TOCDF. This figure is 50 times above the 1 pg/km/day acceptable dose as determined by the Agency for Toxic Substances and Disease Registry (ATSDR).

(4) The HHRA fails to consider impacts from other facilities, including the Hanford facility, and does not assess current levels of contamination (i.e., background)

It is impossible to determine the impact a facility will have on human health or the environment if the facility's expected pollutants are not added to the pollutants currently being emitted by other facilities. For example, for decades the Hanford facility has been a source of radioisotope emissions as well as other hazardous wastes. The emissions from Hanford along with other contributing sources must be considered in order to develop an accurate understanding of the environmental condition of the region. Only then can the true impact of the UCDF incinerator emissions be understood.

Evaluating the current body burdens of toxic chemicals in the impacted population is also necessary in order to properly forecast

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the impact caused by the additional toxics from the UCDF incinerator. The current environmental burden in the impacted area of the chemicals of concern must also be understood for the same reasons.

(5) The HHRA fails to consider the impacts posed by non-lethal levels of nerve agents as revealed in medical problems experienced by Gulf War Veterans

Data from the Gulf War has not been explored in the HHRA. Addendum to Risk Assessment at 5. One of the lessons taught by the Gulf War is that low level agent exposure alone or in combination with other chemicals can generate a range of disturbing health effects. A July, 1996 report requested by the DOD stated that "[i]t appears that a single exposure ... to a very small amount of GB will produce observable acute signs and/or symptoms." Environment Committee- Armed Forces Epidemiological Board, "Longterm Health Effects Associated with Sub-clinical Exposures to GB and Mustard," July 18, 1996.

Careful analysis of low level agent impacts is critical to understanding the risks posed by the UCDF incinerator because as TOCDF has demonstrated low levels of agent will be released throughout life of incineration activities. For example, TOCDF emits agent from the stack. BRD. TR. at 249. Army Project director Tim Thomas acknowledged that since August 22, 1996 there have been at least six (6) confirmed stack releases of nerve agent GB. BRD. TR. 891-892 (note: the 6 releases are reflected in the tape of Mr. Thomas' testimony but were erroneously left out of the transcript).

Moreover, during testing operations to date, TOCDF has experienced agent migration or leaks into areas where agent is not supposed to be present. BRD. TR. at 111, 115, 211, 232, 238, 275 -276, 423, 498; FED. TR. at 7. These facts make clear that the Army is unable to fully control and contain nerve and blister agents. Releases from the UCDF incinerator facility must be expected and subject to risk assessment.

(6) The HHRA fails to consider synergistic effects and disruption of the endocrine system in its evaluation of health effects

Dioxin, DDE, and DDT are examples of chemicals that adversely impact the endocrine systems in humans and wildlife. EPA Special Report on Endocrine Disruption, February, 1997, at 82; EPA Fact Sheet, February, 1997, at 2 - 3. A chemical "might disrupt the endocrine system by affecting any of the various stages of hormone production and activity, such as preventing the synthesis of hormones, by directly binding to hormone receptors, or by interfering with the natural breakdown of hormones." EPA Fact Sheet at 2. See, also, Affidavit of Dr. Peter L. deFur dated July 11, 1996. It has also been recognized that combinations of endocrine disrupting chemicals may result in a more powerful, synergistic effect than if the individual chemicals had acted alone. Affidavit of Dr. deFur at 1 '- 2; Comments in Response of Dr. Mary O'Brien, October 11, 1996, at 2 - 3. The HHRA has simply ignored the endocrine disruption effects and failed to consider this synergistic effect and subsequent impact.

(7) The HHRA does not acknowledge the operational experience at TOCDF which indicates that "lessons learned" are not applied and operating procedures are disregarded or violated

Months after the commencement of agent operations at TOCDF the Army is still attempting via permit modifications to incorporate lessons learned from CAMDS and JACADS. At TOCDF the Army has admitted that it failed to implement the lessons learned regarding the incident involving agent leaking through filter vestibules and the feed chute jam incident. FED. TR. 13, 18. This lack of program follow through demonstrates the Army's lack of commitment to applying the lessons learned.

Aside from the failure to apply lessons learned at TOCDF, the project managers at TOCDF expressed significant concerns about various aspects of operations which were candidly revealed in memoranda and private notes. <u>See</u>, Memoranda between Tim Thomas and Gary Millar at 460-464, 467-473, 478-479, and 481; Gary Millar's journal notes. The problems reflected in these documents are not indicative of a mature technology that is capable of protecting human health and the environment consistent with state and federal standards.

(8) The HHRA cannot rely on ACAMS to timely and accurately detect the release of agents

In response to a concern raised that the UCDF incincrator would release one million toxic doses of agent, the authors of the HHRA stated:

If concentrations of agent being destroyed are detected in the stack at concentrations greater than allowable stack concentrations, then the waste feed will be shut off immediately. Furthermore, at concentrations below the allowable stack concentrations, alarms sound indicating that agent is being detected at higher than expected levels. Therefore, agent concentrations above the allowable stack concentrations are not likely to be released from the stacks.

HHRA Addendum at 8. Experience at TOCDF contradicts these statements.

For example, Utah DEQ officials are unable to determine the quantities of chemical warfare agent emitted in an instance where agent was tested for in a TOCDF stack particulate sample. BRD. TR. 349-350. TOCDF's stack ACAMS are unreliable and cannot determine in an accurate and timely fashion when chemical warfare agents are being released through the stack. BRD. TR. 390 - 394, 445; FED. TR. 109 - 112. The ACAMS placed in the TOCDF stack have not been tested to determine their actual effectiveness in drawing in and testing stack gases. BRD. TR. 472.

These problems also raise serious concerns regarding emergency preparedness capabilities. Unless the Army can establish by verifiable methods that ACAMS are effective the Commission should assume they do not work or will function irregularly. Emergency preparedness plans and contingency plans should be adjusted accordingly.

(9) The HHRA fails to evaluate the non-cancer health effects from expected exposures to dioxin and dioxin-like chemicals

Perhaps the most troubling aspect of the HHRA relied upon by the Commission is its refusal to consider the non-cancer health effects from expected exposures to PCBs, dioxin, dioxin-like chemicals, and the sulfur analogs of dioxins and furans. The risk

assessment contractor attempted to justify the failure to recognize non-cancer health impacts from dioxin and related chemicals in the following passage.

EPA does not endorse using RfDs [reference doses] to assess the noncancer effects posed by dioxin. Rather, the margin or exposure approach has been recommended ... If the facility-specific exposures are a small fraction (i.e., 1% to 3%) of the background exposures, [level of contamination that already exists] then the facility is assumed to pose negligible noncancer risks ... Rough calculations for this scenario were performed for the subsistence farmer scenario located at the fence line at UMCDF. This scenario resulted in a dose of .03 picogram per kilogram per day (pg/km/day), which is within the 1% to 3% range. Therefore ... noncancer effects from potential dioxin emissions do not exceed EPA's benchmark.

Risk Assessment Addendum at 5.' This explanation, which was not specifically adopted by the Commission, must be rejected as completely contrary to public health protection principles and inconsistent with Oregon's BAT requirement.

What the quoted passage attempts to avoid is the stark reality that residents of Oregon, and most of the rest of the United States, already have too much dioxin in their bodies. EPA's 1994 Dioxin Health Assessment Study concludes that an appropriate RfD for non-cancer effects from dioxin exposure would be 10 to 100 times less than the current national exposure levels for dioxin (1 to 3 pg/km/day).⁸,⁹ This analysis was confirmed by the Army's risk

⁷ It is interesting to note that EPA used a reference dose for dioxin identical to the 1 pg/km/day value established by ATSDR in a recent risk assessment for a dioxin incinerator in Times Beach, Missouri. Apparently, EPA does strictly prohibit use of a RfD for calculation of dioxin non-cancer risks.

^{*} EPA Health Assessment for TCDD and Related Compounds, Chapter 9, Draft, May 2, 1994, at 51.

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assessment expert, Dr. Finely. BRD. TR. at 877 - 878. Relying, for the moment on EPA's assessment, this would place the dioxin RfD in the range between .01 and .03 pg/km/day. BRD. TR. at 878.

The "rough" calculation for the subsistence farmer provided in the addendum to the risk assessment reached .03 pg/km/day, the upper end of the RfD. If proper adjustments were made to consider a breast-feeding infant or developing fetus, the .03 RfD would be easily exceeded. Therefore, the Commission has failed to adequately protect these sensitive sub-populations. <u>See</u>, 42 U.S.C. § 6925(c); <u>Ecolotec</u>.

Moreover, in light of the serious accumulation of dioxin in the environment and the low threshold for non-cancer effects, the Commission must take a position that the best available technology is one that produces no dioxin or dioxin-like chemical emissions. Oregon's prudent BAT requirement, which is more stringent than EPA's approach, dictates that the Commission take full account of the dioxin emergency and reassess the technologies that may be used alone or in combination with others at UCDF in order to avoid further damage to human health and the environment.

In sum, the excuse that there is no RfD (i.e., safe dose) for dioxin non-cancer effects is so misleading that it could be considered scientific fraud. The fact that we are all already over the limit for what might be considered a safe dose of dioxin exposure is the obvious reason why EPA chose not to provide a RfD. This reality clearly counsels against permitting sources like the

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^{&#}x27; A picogram (pg) is a trillionth of a gram.

proposed UCDF incinerator that will emit more dioxin into the environment.

E. The Commission Failed to Consider Solvated Electron Chemistry in its BAT Analysis

Teledyne Brown Engineering (TBE) in partnership with Commodore Environmental Services (COES) currently offers a solvated electron technology (SET) process. The SET technology claims to be capable of destroying M-55 rockets containing GB. It has been successfully tested on all chemical weapons agents and explosives.

The technology uses a low temperature bath of sodium and anhydrous ammonia and claims no hazardous byproducts. The SET process was selected for the Rapid Commercialization Initiative (RCI) and was assigned to the DOD. In September, 1996 the SET process completed a successful RCI demonstration for the Navy.

The Army has been aware of the SET process since July, 1996 when the successful results of testing on chemical agents was presented to a NATO conference attended by high ranking Army officials in the chemical demilitarization program. The Army should have brought this technology to the attention of the Commission for full evaluation.

In addition to reconsidering the BAT analysis for the reasons stated previously, the Commission should reopen the BAT analysis in order to fully consider the SET process.

F. The Commission's Findings Concerning the Army's Compliance History are Inadequate

The Commission, relying on DEQ staff, evaluated the Army's compliance history concerning the JACADS and TOCDF installations.

However, the regulatory requirement makes clear that the examination of compliance history must include "other similar facilities." OAR 340-120-010(2)(h). This means that the Army's compliance history at CAMDS and Rocky Flats are also relevant. Moreover, "similar facilities" includes other hazardous waste incinerators and/or facilities that treat, store or dispose of chemical weapons.

There is no indication in the Commission's assessment of the Army's compliance history that with respect to TOCDF the Army considered 1) concerns raised by former safety manager Steve Jones; 2) concerns raised by former general manager Gary Millar; 3) concerns raised by QA auditor Don Smith; 4) concerns raised by incinerator technician John Hall; 5) concerns raised by medical technician James DeHaven; 6) allegations of interference with a witness during a RCRA whistleblower hearing (see, 42 U.S.C. § 6971) against Army official Dave Jackson; and 7) refusal of TOCDF Army officials to provide testimony in a RCRA whistleblower hearing.

The Commission should reopen the record to consider the abovereferenced information. Failure to reopen the record would result in an incomplete compliance history assessment.

G. Emissions of Chemical Agents from the Proposed UCDF Incinerator Stack and Into the Navigable Waters of the United States will Violate the Federal Clean Water Act and any Corresponding State Requirements

Oregon has taken steps to implement the requirements of the federal Clean Water Act. ORS 468B.035. The Clean Water Act (CWA) specifically prohibits the discharge of chemical warfare agents

into the waters of the United States. 33 U.S.C. § 1311(f). It is clear that the Army's incinerators cannot completely destroy the chemical agents they attempt to destroy. Consequently, stack emissions of chemical agent will reach navigable waters such as the Columbia and Umatilla Rivers in direct violation of the CWA prohibition and Oregon law. In addition to implementing the CWA, Oregon law also specifically prohibits any person from causing pollution of the waters of the state. ORS 468B.025. This requirement will be violated by operation of the UCDF incinerator.

H. The UCDF Incinerator will Cause Air Pollution in Violation of Oregon's Air Quality Law

An air contaminant discharge permit has been issued for the UCDF incinerator. This permit contains permit conditions that are connected to the hazardous waste permit. To the extent issues jointly involving the hazardous waste permit and the air permit are reconsidered by the Commission, both permits should be similarly effected and subjected to further public review.

The expected emissions of dioxin, dioxin-like chemicals, PCBs, sulfur analogs of dioxin, and chemical warfare agents will be in quantities that will cause air pollution. <u>See</u>, ORS 468A.005(5). Air pollution from any new air source is prohibited by State law. ORS 468A.010(a); 468A.015. Given this restriction the Commission should reconsider all available alternatives.

V. CONCLUSION

It is clear on the present record and based on the information provided herein that the risk assessment does not adequately consider emissions, routes of exposure, sensitive sub-populations,

and significant impacts (i.e., non-cancer effects from dioxin, endocrine disruptors, synergistic effects). The omission of sensitive sub-populations raises important environmental justice concerns.

Moreover, no comparative assessment of risks for each of the evaluated technologies was performed. In fact, a significant technology (the SET process) was left out of the BAT analysis completely.

Consequently, as a result of these serious deficiencies and others noted herein, the Army's permit must be voided <u>ab initio</u>. The Army should be required to resubmit its application omitting systems that will not be employed at UCDF (i.e., carbon filters, BRA, and dunnage incinerator) and including full information on the status of non-incineration technologies. New risk assessments should be performed comparing all potential technologies and allowing full public participation throughout the process.

Respectfully submitted,

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Counsel for Petitioners

CERTIFICATE OF SERVICE

I certify that the foregoing Petition for Reconsideration was served via First Class Mail, postage pre-paid on April 14, 1997 to the party listed below.

U.S. Army Umatilla Chemical Depot Hermiston. Oregon 97838-9544

RICHARD E. CONDIT

ATTACHMENT B

MEMORANDUM AND ORDER UNITED STATES DISTRICT COURT FOR THE DISTRICT OF UTAH March 24, 1997

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	UCT COURT FOR THE DISTRICT OF UTAH
CHEMICAL WEAPONS WORKING GROUP INC., et al.,	: MEMORANDUM DECISION
Plaintiffs, vs.	AND ORDER : : Civil No. 2:96-CV-425C
UNITED STATES DEPARTMENT OF THE ARMY, et al., Defendants.	:

This matter is before the court on plaintiffs' second motion for preliminary injunctive relief to enjoin defendants from incinerating chemical warfare agent at the Tooele Chemical Agent Disposal Facility (TOCDF). Plaintiffs claim that "new" evidence, that is, evidence discovered after the conclusion of hearings on plaintiffs' first motion for preliminary injunctive relief, demonstrates that continued incineration of agent at TOCDF poses a threat of irreparable harm. Plaintiffs also contend that the new evidence requires that defendants prepare a supplemental environmental impact statement (SEIS). The new evidence presented by plaintiffs falls into two general categories: (1) operation of TOCDF, and (2) stack emissions.

Procedural Background

Plaintiffs initiated this suit on May 10, 1996. The amended complaint alleges that defendants have violated the National Environmental Policy Act (NEPA), the Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act (TSCA), the Defense Authorization Act, and the Clean Water Act (CWA) and that defendants' operation of TOCDF constitutes a nuisance under Utah law. The court granted defendants' motions to dismiss the RCRA, CWA, and nuisance counts. Subsequently, plaintiffs initiated several proceedings before the Utah Solid and Hazardous Waste Control Board ("Utah Board") to challenge various issues and decisions regarding TOCDF's hazardous waste permits. These parallel proceedings are, to date, ongoing.

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Plaintiffs' first motion for preliminary injunctive relief ("first motion"), filed on June 12, 1996, sought to enjoin defendants from commencing trial burns of chemical warfare agent at TOCDF. After a nine-day evidentiary hearing, this motion was denied on August 13, 1996. <u>See</u> <u>Chemical Weapons Working Group. Inc. v. Department of the Army</u>, 935 F. Supp. 1206 (D. Utah 1996) ("<u>CWWG F</u>").

On October 11, 1996, plaintiffs filed a notice of appeal of the court's denial of their first motion and dismissal of various claims alleged in the first amended complaint. Seven days later, on October 18, 1996, plaintiffs moved the United States Court of Appeals for the Tenth Circuit to stay TOCDF operations pending resolution of their appeal. Because plaintiffs had failed to first seek a stay in the district court, the Tenth Circuit denied plaintiffs' motion on December 6, 1996. <u>Chemical Weapons Working Group (CWWG) v. Department of the Army</u>, 101 F.3d 1360 (10th Cir. 1996). The Tenth Circuit did not address the merits of plaintiffs' appeal.

On January 11, 1997, plaintiffs filed a consolidated motion for stay and second motion for preliminary injunction. A hearing on plaintiffs' consolidated motion was held over six days from March 3, 1997 through March 10, 1996. Having considered the evidence presented at that hearing, the memoranda filed by the parties, and the arguments presented by counsel, the court

denies plaintiffs' second motion for a preliminary injunction' and enters the following findings of fact and conclusions of law;

FINDINGS OF FACT

Background

1. In its previous Memorandum Decision and Order, the court made detailed factual findings concerning the physical facility at TOCDF, the nature of the chemical warfare agent stockpile stored at Deseret Chemical Depot² ("Depot"), the Army's nearly twenty-years of experience with large-scale incineration of agent materials, and the compliance process dictated by NEPA. <u>CWWGI</u>, 935 F. Supp. at 1209-14. The court will not repeat its prior findings here except as necessary to explain the pending consolidated motion.

TOCDF Operations

2. On August 22, 1996, TOCDF began destroying chemical agent pursuant to Trial Burn Plans approved by the Utah Division of Solid and Hazardous Waste.³ Two of TOCDF's five furnaces became operational — the Deactivation Furnace System (DFS) and the first of two Liquid Incinerators (LIC-1). The DFS is used to incinerate munitions which, after being drained of agent, remain contaminated. Agent drained from munitions and ton containers is destroyed in the LIC. As of February 4, 1997, the DFS had functioned for more than 569 hours and the LIC

² Formerly known as the Tooele Army Depot.

¹ TOCDF's RCRA Part "B" permit specifies distinct sets of conditions for the "long term" and "short term" operation of the facility. The short term period is comprised of three phases — "shakedown." "trial burn," and "post-trial burn." The trial burn plans cover the shakedown and trial burn phases only.

^{&#}x27; The court entered judgment on plaintiffs' motion for a stay pending appeal by a separate Order.

for over 736 hours' resulting in the destruction of 11,472 rockets and 122,750 pounds of the nerve agent GB. This amount represents thirty-eight percent of the stockpile of GB-filled rockets stored at the Depot.

3. On January 17, 1997, TOCDF began processing ton containers' stored at the Depot in the Metal Parts Furnace (MPF) and GB nerve agent drained from those containers in the second LIC (LIC-2). As of February 4, 1997, fifty-one such ton containers and 76,500 pounds of GB had been destroyed.

4. All present activities at TOCDF are governed by the Trial Burn Plans, TOCDF is currently operating in the "shakedown" phase, a period designed to identify possible mechanical difficulties, ensure that the facility has reached operational readiness, and achieve steady-state operating conditions prior to conducting the trial burns.

5. A munitions processing schedule governs the order in which the various munitions stored at the Depot are to be destroyed at TOCDF. Each portion of the schedula, termed a "campaign," is devoted to the disposal of a specific item in the stockpile inventory. Defendants submitted evidence in the form of declaration testimony by Gary J. Boyd, author of the quantitative risk assessment for TOCDF, that since the court's decision in <u>CWWG I</u>, the munitions processing campaigns have been reordered to provide for the destruction of higher risk munitions earlier in the processing schedule. Mr. Boyd testified that accidents involving nerve agent GB represent the majority of the risk from potential stockpile accidents; accordingly, the first campaign in the reordered munitions processing schedule provides for the disposal of GB-

⁴ Ton containers are large steel bulk storage containers. There were approximately 5,709 GB-filled ton containers in the original stockpile.

filled rockets and ton containers. The reorganization of the munitions processing campaigns will reduce the stockpile risks much more rapidly than would have occurred under the original processing schedule.

6. During the shakedown period, three events have occurred which have caused defendants to halt operation of TOCDF: (1) detection of low levels of agent in two filter containment vestibules; (2) leakage of a small quantity of decontamination fluid through hairline cracks in a second level cement floor to a first floor electrical room; and (3) migration of agent into an observation corridor. In addition, TOCDF has experienced other operational and personnel difficulties. Citing these events and difficulties, plaintiffs maintain that TOCDF's present-day operation is substantially different from that contemplated during the NEPA compliance process and presents a risk of irreparable harm. Specifically, plaintiffs contend that while the "lessons learned" program and the operation of prototype facilities at the Depot (CAMDAS) and at Johnson Atoll (JACADS) were designed to identify, analyze, and correct problems of this type prior to the commencement of agent operations at TOCDF, the facility is being operated in a reactive, trial-and-error manner.

Agent Migration Into Filter Vestibules

7. The primary means of preventing an airborne agent release to the environment or the spread of agent vapor within TOCDF is the Heating, Ventilation, and Air Conditioning (HVAC) system. The HVAC maintains negative pressure throughout the facility so that air from areas least likely to be contaminated with agent flows to areas where contamination is more likely. Air from areas in which contamination is most likely is steadily removed and directed through a bank of filters designed to extract agent. Of the nine filter units in the system, seven are typically in use

at any given time with the remaining two units serving as reserves. Air passing through the filters is funneled into a common exhaust stack and monitored for the presence of agent. Additional agent monitors are located between the charcoal banks that comprise the filter units.

8. The HVAC filters are enclosed within a metal structure containing sealed access doors. In March 1995, it was discovered that the gaskets surrounding similar access doors at JACADS allowed small amounts of agent to escape to the environment. It was subsequently determined that different door gaskets and clamping mechanisms would prevent future agent releases. It was also determined that secondary containment structures, not part of the original design plans for either JACADS or TOCDF, should be constructed over the access doors at both facilities. These structures, called "vestibules," were constructed at both facilities in 1996.

9. The filter vestibules are pre-fabricated wooden structures. The interiors of the vestibules are modified so that each is lined with 22-gauge stainless steel sheeting and caulked with silicon; however, the structures are not designed to be airtight. In August 1996, the vestibules were monitored for the presence of agent through the use of Depot Area Air Monitoring System (DAAMS) units. DAAMS units collect air contents onto an absorbent material inside a testing tube over an extended period of time, typically eight hours. The absorbent material is then analyzed for the presence of agent. The other monitoring system used at TOCDF, Automatic Continuous Air Monitoring System (ACAMS), is a self-contained chromatograph used to determine agent concentrations on a near real-time basis.

10. On August 23, 1996, GB nerve agent migrated into the filter vestibules attached to filter units 107 and 108. The release was detected and confirmed the next day during laboratory analysis of absorption tubes removed from DAAMS units in both vestibules. The testing revealed

that between 8:00 a.m. and 4:00 p.m. on August 23, 1996, agent was present in vestibule 108 at a level of 3.62 Time Weighted Average (TWA)³ and in vestibule 107 at a level of .25 TWA. During this eight hour period, filter unit 107 was in operation for approximately nine minutes; filter unit 108 was off-line for the entire day. On the afternoon of August 23, 1996, three TOCDF employees were present in the vestibule 107 for approximately twenty minutes. Filter 107 was off-line at the time. Medical tests of the personnel indicated that they suffered no agent exposure.

11. The plant shift manger was notified of the confirmed agent levels in the filter containment vestibules at approximately 2:32 p.m. on August 24, 1996. Processing of M55 rockets was immediately suspended. An announcement made over the public address system declared the area in and around the filter units off-limits to all but essential personnel, a 200-foot clear zone was established and cordoned off with barricade tape, and ACAMS agent detection systems were placed outside the filter vestibules and at the plant boundaries. None of these ACAMS units registered the presence of chemical agent. In addition, any personnel entering the clear zone were required to wear protective masks. Richard Holmes, Associate Project Manager for TOCDF, testified that he could not recall whether a masking alarm sounded to warn TOCDF personnel in the area to don their masks; however, the evidence suggests that the alarm was not sounded. Finally, the ambient air present in the filter vestibules was drained back into TOCDF.

12. An investigation of the incident revealed that the most probable cause of the agent migration into the filter containment vestibules was the procedure used to place the filter units offline, a phenomenon not encountered at JACADS. After consultation with the Executive

⁵ TWA is an agent concentration exposure measurement established by the Office of the Surgeon General. An average individual can be exposed to one TWA for eight hours per day, forty hours per week, for his or her lifetime without suffering adverse health effects.

Secretary of the Utah Board, defendants altered the procedure to ensure that negative pressure was maintained within the filter units at all times. Defendants also installed additional filtered valves in all of the filter vestibules. Finally, defendants permanently installed ACAMS agent detection systems in the vestibules. All of these actions were taken before agent operations resumed on August 30, 1996.

Cracks in the Concrete

13. On September 18, 1996, TOCDF experienced a leak of approximately eight ounces of decontamination liquid through the ceiling of an electrical room located on the first floor of the Munitions Demilitarization Building from a decontamination area located above. Upon learning of the leak, the plant manager halted agent processing activities. Tests detected no chemical agent present in the liquid, and no electrical equipment was affected. An inspection of the decontamination room, used by TOCDF personnel to decontaminate their protective equipment after exiting Explosive Containment Rooms (ECRs), revealed several hairline cracks in the concrete floor which allowed fluid to leak into the electrical room. Mr. Holmes testified that the cracks were sealed by an injection of a low viscous grout.

14. Cracks in concrete have occurred in other areas at TOCDF. Donald Smith, EG&G's Senior Quality Assurance Specialist at TOCDF, testified that he noticed cracks as early as 1990 during construction of the facility. However, Timothy Thomas, the Army's TOCDF Project Manager, testified that cracks in the concrete identified during construction of the facility were repaired. John Russell Hall, an Engineering Technician for EG&G at TOCDF from February 6, 1994 to January 4, 1996, testified that he noticed cracks in the concrete floors of the Toxic Maintenance Area (TMA) and the Residue Handling Area (RHA) in 1995. Mr. Hall testified that

he completed a work order for the cracks in the TMA on November 22, 1995, but he was unable to recall whether these cracks or those located in the RHA were repaired by the time he left EG&G's employ. In fact, Mr. Hall testified in his deposition that he had no knowledge of any corrective action taken by defendants to address cracks in the concrete at TOCDF since his employment was terminated. Further, the court notes that Mr. Hall's tenure at TOCDF was during systemization, a phase of operations designed to identify and correct problems in TOCDF's physical plant and equipment.

15. Defendants have established corrective measures to identify, map, evaluate, and repair cracks in the concrete at TOCDF. Cracks are identified through routine and scheduled inspections of TOCDF's structural integrity by EG&G personnel. When a crack is identified, a work order is prepared and the crack is evaluated to determine its nature and the appropriate method of repair. Minor and hairline cracks in the concrete or the floor coating are repaired by applying a filling compound resistant to decontamination fluid and re-coating the area with chemical-resistant epoxy paint. Major cracks are repaired in a similar manner after being injected with a bonding compound. When cracks are identified in a toxic area, agent operations in that area are suspended until the crack is fixed. Thomas A. Kurkjy, EG&G's Risk Management Division Director, testified that hundreds of minor cracks and three major cracks — cracks having a discernible void -- have been identified in the concrete floor and floor coating at TOCDF and have been repaired.

Agent Migration Into Observation Corridors

16. On January 26, 1997, GB nerve agent vapors migrated into an unoccupied observation corridor adjacent to the first floor buffer storage area. An ACAMS alarm in the

corridor sounded, and TOCDF personnel donned their protective masks and evacuated the building. In addition, TOCDF operations were halted pending an investigation into the alarm. The ACAMS monitoring system indicated that agent had been present in the observation corridor at a level of 1.04 TWA. Agent was not released to the environment and no TOCDF employees were exposed to agent. The Army notified the appropriate regulatory authorities of the event, and agent operations resumed only after state approval was received.

17. An investigation revealed that the event was triggered when, at approximately 10:30 p.m. on January 25, 1997, an interior door between an air lock and the DFS room was opened during maintenance operations. The opening of the door caused the air pressure in nearby Toxic Cubicle⁶ to rise slightly, which, in turn, activated an alarm in TOCDF's control room. A control room operator responded by opening a toxic cubicle bypass damper to lower the air pressure in the Cubicle, an action that violated TOCDF's standard operating procedures. Opening the damper had a secondary effect of causing a pressure imbalance between the observation corridor and the buffer storage area. As a result, when a drained GB ton container was moved through the storage area en route to the MPF, GB vapor was permitted to migrate into the corridor.

18. Defendants have taken corrective measures to prevent such an event from recurring: operator procedures and system changes have been implemented, control room operators have received additional training on the secondary effects of opening bypass dampers, TOCDF's standard operating procedures have been modified to emphasize the appropriate use of the toxic cubicle bypass damper, and additional air pressure alarms have been installed in TOCDF's control room.

⁶ The Toxic Cubicle houses the liquid agent storage tank.

Other Operational Events at TOCDF

19. TOCDF has experienced additional operational events during the shakedown period. These include: the failure of heating elements in the slag removal system in LIC-1; incidents. during rocket processing initialization, loss of electrical power, temporary HVAC imbalance during a test of the fire suppression system, malfunction of the agent quantification system, and use of a "hot cut-out" procedure to remove TOCDF personnel from their protective clothing. Slag Removal System Operation

20. The incineration of liquid agent produces acidic by-products which condense on the walls of the secondary combustion chamber of the LICs to form a molten slag. This slag slowly flows down the walls and collects in a pool at the bottom of the chamber. The slag removal system employs sixteen heating elements to maintain the slag in a molten state so that it may be drained from the LICS. During agent operations in LIC-1, several of the elements failed, requiring defendants to halt processing in LIC-1 temporarily so that the faulty elements could be replaced. Defendants intend to modify the slag removal system by fitting protective sloeves around the heating elements to increase their useful life expectancy.

Incidents During Rocket Processing Initialization

21. On October 14, 1996, an end cap from the rear of an MS5 rocket shipping and firing tube was inadvertently removed by a feed gate designed to allow rockets to pass into an ECR for disassembly. Operation of the affected rocket processing line was halted temporarily to allow TOCDF personnel to examine the tube and the rocket. Once it was determined that the rocket was intact and stable, the employees secured the end cap to the tube and processing resumed. Rocket processing procedures have since been modified to minimize the likelihood that such an event will occur in the future.

22. On two occasions – once in November 1996 and once in December 1996 – rocket parts have jammed in the chute feeding into the DFS. After both incidents, operations at TOCDF were halted to allow the jams to be cleared and an evaluation to be conducted. An investigation revealed that a build-up of heated materials on the feed chute prevented sheared rockets from being fed properly into the DFS. Feed chute jams experienced at JACADS had a different root cause, one not observed at TOCDF. To reduce the likelihood of future jams at TOCDF, defendants have heightened inspection of the chute area and have modified the chute to allow for ready access, should a jam occur.

Loss of Electrical Power

23. In mid-September 1996, TOCDF experienced a loss of commercial electrical power for 38 minutes. TOCDF's emergency power supply activated and provided power to essential equipment in the plant, including the HVAC system. During the restart of the HVAC system, only one of the two normally operating air supply handlers came on line, causing an imbalance in the HVAC system air pressure. The masking alarm sounded and notification was given to the Deseret Chemical Depot Emergency Operations Center. Within minutes of the power loss, the second air supply handler was started manually and the masking signal was withdrawn. No chemical agent migrated from the facility and no TOCDF personnel were exposed to agent.

24. Power failures are not uncommon at TOCDF. However, there has never been an occasion when the backup power system failed to properly activate upon loss of power. Because ACAMS systems operate on an independent and uninterrupted power supply, their operation is not affected by a loss of commercial power.

Temporary HVAC Imbalance During Fire Suppression System Test

25. On September 2, 1996, a temporary imbalance in the HVAC system occurred in the Unpack Area (UPA) during a test of the fire suppression system. In conducting the test, maintenance personnel shut off the water supply to the sprinkler system. This action triggered an abnormal water pressure alarm and caused the internal fire dampers in the UPA ventilation system to close automatically. This closure caused a temporary pressure imbalance in the UPA HVAC system. Negative pressure was maintained throughout TOCDF during the event and the UPA HVAC system was stabilized quickly. No agent migrated from primary containment areas and employee safety was maintained. TOCDF maintenance personnel have since received corrective training to ensure that such an incident does not recur.

Agent Quantification System Operation

26. The Agent Quantification System (AQS) is designed to measure the amount of agent drained from munitions. The measurement is made not for security purposes but to determine the amount of residual agent being fed into the DFS. This calculation is required by TOCDF's RCRA permits. During initial agent operations it was discovered that the AQS was improperly indicating the presence of agent in rockets that had been completely drained. An investigation revealed that the AQS allowed a small quantity of agent to flow into the agent holding tank before being measured. Proper operation of the AQS was restored by the installation of a metal plate vertically from the top of the AQS downward into the tank, and similar problems have not recurred.

Hot Cut-Outs

27. TOCDF personnel working in contaminated areas are required to wear demilitarization protective ensemble (DPE) suits. These plastic suits are completely sealed from the outside environment and must be physically cut to be fernoved from employees. When the cut-out procedure is performed in an area where agent concentration exceeds 1 TWA, the exit is termed a "hot" cut-out. Plaintiffs argue that the hot cut-out procedure exposes TOCDF employees to chemical agent. In support of their claim, plaintiffs presented documentary evidence that the number of hot cut-outs performed at TOCDF increased steadily from ten in September 1996 to a high of fifty in November 1996. The increased frequency of hot cut-outs was due to two factors. First, practices in place at the time attempted to minimize the amount of decontamination liquid utilized outside the ECRs. Second, the nature of the work performed during those months required more frequent handling of equipment bearing liquid agent. While the hot cut-out procedure requires employees to exit the DPE suit in the presence of agent, GB nerve agent is primarily an inhalation hazard and every worker is equipped with an independent breathing apparatus. Because TOCDF will process only GB nerve agent for at least one year, the court finds that the hot cut-out procedure does not present a threat to employee safety prior to trial.

28. None of the events cited by plaintiffs or other operational difficulties experienced at TOCDF has resulted in loss of life, injury to TOCDF personnel, or harm to the environment. James J. Cudahy, an expert in the evaluation, design, operation, and permitting of hazardous waste incineration facilities, testified that the number of safety related incidents at TOCDF is not unusually high when compared to typical start-ups of modern complex systems for hazardous waste incineration.

TOCDF Management

29. Plaintiffs argue that defendants' management of TOCDF does not ensure protection

of public health and the environment. In support of their assertions, plaintiffs presented documentary evidence and testimony from former TOCDF employees Gary Millar, John Hall, and James DeHaven, and current employee Donald Smith.

30. Plaintiffs rely heavily on a November 9, 1996 letter from Gary Millar, former General Manager at TOCDF, to Fred Parks, President of EG&G, written shortly after Mr. Millar's employment with EG&G was terminated. In the letter, Mr. Millar raised several issues about TOCDF operations and management. Mr. Millar indicated that on the date agent operations began at TOCDF, August 22, 1996, the facility was at a marginally acceptable state of safety readiness. The letter also speaks of numerous safety, quality, environmental, and operational deficiencies which, in Mr. Millar's opinion, are excessive in a "high risk business like TOCDF." In addition, Mr. Millar was highly critical of management actions at TOCDF which he analogized to the those preceding the nuclear accident at Three Mile Island and the Challenger Disaster and of a corporate "mindset" which, according to Mr. Millar, presents a high risk to TOCDF employees, the public, and the environment.

31. Mr. Millar's testimony under oath belies many of the concerns raised in the November 9, 1996 letter. On December 12, 1996, Mr. Millar testified to the Utah Board that TOCDF was being operated safely and that state regulatory agencies charged with overseeing the facility were doing a "good job" keeping TOCDF operations and the public safe. Mr. Millar further testified that he nover intended his letter to become public and that he considered the issues raised therein to concern EG&G's internal management, not plant safety. Mr. Millar's deposition testimony echos his testimony before the Utah Board. Mr. Millar acknowledged that when he wrote the letter, he was upset about his recent firing and that he did not intend the letter to be disseminated

to the Army, the State of Utah, or the public. Further, Mr. Millar testified that he believed TOCDF to be "inherently safe" and that he did not consider the risks described in the November 9, 1996 letter to be so serious that he was required to disclose them to state regulatory authorities. The court finds Mr. Millar's testimony more credible and more probative than the contents of his November 9, 1996 letter.

32. Plaintiffs also presented evidence in the form of deposition and live testimony from John Hall. Mr. Hall testified that he had noticed and reported various problems at the facility, including cracks in concrete flooring and leaks of sulfuric acid from batteries powering the emergency power system. However, Mr. Hall also testified that his employment with EG&G ended on January 4, 1996 and that he has no knowledge of conditions or operations at TOCDF since that date. Accordingly, insofar as Mr. Hall's testimony relates to events occurring since he left EG&G's employ or the potential for future problems at the facility, the court finds his testimony to be of little probative value.

33. Plaintiffs also presented evidence in the form of testimony by James DeHaven, an emergency medical technician employed at the Tooele Health Clinic from October 1, 1996 to February 14, 1997. Mr. DeHaven testified that electrocardiograms (EKGs) he administered to several Depot personnel revealed a higher than normal incidence of bradycardia (slow heart rate) and "blocks" (interruptions of the electrical pathways to the heart), both symptoms of nerve agent exposure. Mr. DeHaven further testified that his medical supervisors, Army personnel, and representatives from the Utah Department of Health ignored his concerns. On cross-examination, Mr. DeHaven acknowledged that he did not know the prior medical histories of those employees exhibiting bradycardia or blocking, how long they had exhibited either condition, possible other

causes of the symptoms, how long the workers had been employed at the Depot, or whether they worked at TOCDF or some other area of the Depot.⁷ Mr. DeHaven also testified that all EKGs administered at the Tooele Health Clinic were transmitted to an Army hospital in Texas to be read by a cardiac specialist. Mr. DeHaven was not aware of any instance in which an EKG administered at the Depot had been deemed abnormal by a cardiac specialist. Accordingly, the court finds that Mr. DeHaven's testimony did not constitute evidence that TOCDF personnel had suffered nerve agent exposure.

34. Plaintiffs also relied on the testimony of Donald Smith and on entries contained in private journals in which Mr. Smith recorded concerns and frustrations he experienced as EG&G's Senior Quality Assurance Program Development Coordinator at TOCDF. Throughout his testimony, Mr. Smith made clear that his journals did not represent his professional work product, were intended to be private, and were often used to "[vent] emotional feelings at the time." Hearing Tr. at 76 (March 6, 1997). Mr. Smith also testified that the latter portions of his journal were written while he was being treated with heavy medication. Finally, Mr. Smith testified that many, if not most, of his journal entries relating to TOCDF were based not on his personal knowledge, but on hearsay evidence. Accordingly, the court finds Mr. Smith's testimony to be of little probative value.

35. Finally, plaintiffs attempted to establish that Mr. Millar and Mr. Hall were terminated from their employment with EG&G in retaliation for raising concerns regarding safety at TOCDF. Defendants presented evidence in the form of Timothy Thomas' supplemental declaration that Mr.

⁷ Later testimony established that the medical clinic at TOCDF is separate from the Tooele Health Clinic.

Millar's firing was predicated on his inability to effectively communicate his management priorities and instructions and on his management approach, which caused stress in other EG&G personnel. In his deposition testimony, Mr. Millar admitted being told that he was causing morale problems among the workforce at TOCDF and that several EG&G managers had filed written complaints about him. Defendants also presented Mr. Hall's deposition testimony in which he conceded that he had no direct evidence that his firing was retaliatory in nature. The court finds that plaintiffs have produced insufficient evidence to establish that either Mr. Millar or Mr. Hall were terminated from their employment with EG&G for raising concerns regarding safety at TOCDF.

Quantitative Risk Assessment

36. The Army's Program Manager for Chemical Demilitarization, Major General Robert D. Orton, has directed that a quantitative risk assessment (QRA) and risk management program be developed for each of the eight planned chemical demilitarization facilities in the continental United States, including TOCDF. The TOCDF QRA estimates the probabilities and public health consequences of potential accidental releases of chemical agent during chemical storage and disposal activities. Releases resulting from internal initiating events (those originating inside the facility or directly from the activity being performed) and from external events (e.g. earthquakes, aircraft accidents, and tornadoes) were included. In addition, the TOCDF QRA assesses the public risk associated with storage of the chemical munitions at the Depot absent demilitarization operations. The TOCDF QRA is based on the "as-built TOCDF design" and incorporates data derived from JACADS.

37. At the time of the court's decision in <u>CWWG I</u>, the QRA for TOCDF was in draft

form. Since that time, the final QRA for TOCDF has been issued. The final QRA reflects several changes from the draft version. First, as discussed above, the munitions processing campaigns have been reordered so that higher risk munitions are destroyed earlier in the processing schedule. Second, the expected duration of processing operations at TOCDF has increased from 6.2 to 7.1 years. This change reflects the final QRA's reliance on the now de-classified actual processing schedule for TOCDF rather than on an estimated schedule, as had the draft QRA. Third, the final QRA incorporates a more realistic model for measuring risks associated with agent spills in storage area igloos. The draft QRA assumed that all igloo spills would completely exit the igloos and be subject to outside evaporation rates. The final QRA assumes that smaller spills not having sufficient volume to reach the doorway will be confined to the interior of the igloo. Fourth, the final QRA more realistically predicts the number of M55 rocket igloos that would explode during an earthquake. The draft QRA assumed that the explosion of one igloo would trigger all of the remaining igloos to explode. The current model predicts the number of igloos that would explode in earthquakes of varying sizes.

38. The final QRA concludes that, on average, 34 days of continued storage of the stockpile incurs a public risk equal to that associated with the entire 7.1 years of TOCDF agent operations. If rare events such as earthquakes and aircraft accidents are removed from the assessment, the finding is stronger — the risk to the public from the entirety of TOCDF's operations is equaled by the risk of only 2.3 days of continued storage.⁴ The final QRA also concludes that a one year delay in processing will approximately double the risk to the population.

^{*} This is so because earthquakes dominate the risks from disposal more than those associated with storage.

surrounding the stockpile.

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Stack Emissions

39. Plaintiffs allege that "the health risk from the on-going daily stack emissions of toxic chemicals [at TOCDF] including both dioxin and nerve agent is both more real and quantitatively greater than previously disclosed." Plaintiffs' Consolidated Memorandum in Support of Plaintiffs' Motion for an Injunction Pending Appeal and Plaintiffs' Second Motion for Preliminary Injunction, at 3. Plaintiffs base this claim on "new" evidence that: (1) nerve agent GB is being emitted from the stacks at TOCDF; and (2) the Utah Department of Environmental Quality (DEQ) improperly manipulated the screening health risk assessment (SRA) performed for TOCDF by reducing estimates of mustard gas emissions, deleting risk calculations associated with open burning and open detonation, and omitting risk scenarios based on dioxin exposure to breast-fed infants and subsistence farmers.

GB Emissions

40. Stack effluent gasses at TOCDF are regularly monitored for a number of analytes, including GB, by ACAMS and DAAMS monitoring systems installed in the stacks. Stack samples are analyzed, and the results are forwarded to state regulatory authorities.

41. Plaintiffs argue that analyses of stack particulate emissions at TOCDF indicate the presence of nerve agent GB in the stack effluent. Plaintiffs also allege that defendants' testing and ... analysis methodologies underestimate the amount of nerve agent actually escaping the stack and overestimate the agent destruction and removal efficiencies calculated for the DFS. In support of their claims, plaintiffs presented evidence in the form of declaration and live testimony by Pat Costner and a document prepared by EG&G's subcontractor, Battelle, which reports non-zero

readings for nerve agent GB in stack emissions at TOCDF. The court finds that the evidence presented by plaintiffs is insufficient to demonstrate conclusively that nerve agent GB is being emitted from the stacks at TOCDF. All of the positive results cited in the Battelle document were below the level of quantification (LOQ), that is, the sensitivity or calibration range, of the monitoring equipment, a level approximately equivalent to a GB stack concentration over 5,500 times less than the maximum allowable regulatory-based GB stack concentration. Values below the LOQ have a lower confidence that the quantity of GB detected is accurate and could reflect machine "noise," an interferant, or a false positive. The court finds that Ms. Costner's testimony is only marginally probative in that much of the scientific data underlying her opinions was not directly applicable to the TOCDF facility.

42. Plaintiffs attempt to analogize the potential health effects of alleged GB emissions with illnesses suffered by veterans of the Persian Gulf War. In lieu of written or live testimony, the parties introduced documentary evidence, mainly in the form of articles from periodicals. The court finds that because the etiology of Gulf War illness is not known with any degree of reasonable certainty, the evidence submitted on this subject is not probative of the issues raised by plaintiffs' consolidated motion.

Screening Health Risk Assessment

43. Prior to approving trial burns of chemical agent at TOCDF, DEQ performed an SRA which analyzed the impacts of expected TOCDF emissions on human health and the environment. The SRA followed Environmental Protection Agency (EPA) guidance in adopting conservative assumptions.

44. In <u>CWWG I</u>, the court discussed in detail the risk assessment performed for TOCDF.

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935 F. Supp. at 1213-14. After carefully considering the health risks associated with dioxin exposure and DEQ's decision to climinate from its February 1996 SRA risk scenarios regarding a subsistence farmer and a breast-feeding infant, the court found that:

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[a]lthough plaintiffs have shown that the assumptions applied in the State's health risk assessment may indicate a higher level of risk for some hypothetical persons, this does not constitute a showing that there is an actual risk to some person or persons posed by the emissions levels predicted for the facility.

Id. at 1214. None of the new evidence presented by plaintiffs undermines the court's prior finding.

45. As they did with their first motion, plaintiffs rely heavily on a draft chapter of the EPA's "Health Assessment Document for 2, 3, 7, 8, Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds" (Dioxin Reassessment). However, this document, which by its terms is not to be cited or quoted, remains subject to review by EPA's Science Advisory Board and possible public comment and does not represent the EPA's final position. The court finds that scientific knowledge regarding health risks associated with dioxin exposure and the methods to assess the health impacts of dioxin emissions at TOCDF remains unchanged since the previous hearing.

46. In <u>CWWG I</u>, the court addressed the omission of the subsistence farmer and breastfeeding infant scenarios from the SRA. 935 F. Supp. at 1213-14. The court noted that the final version of the SRA "considered three farmer scenarios based on a survey of actual farming practices in the area, and simply deleted the breast-feeding infant scenario." Id. at 1214. Plaintiffs argue that the final SRA erroncously omitted consumption of local dairy products from the risk calculus. In support of this contention, plaintiffs presented evidence in the form of a written summary of farming activity surrounding TOCDF drafted by Rachel Shilton, an engineer

in DEQ's Division of Solid and Hazardous Waste, and an unofficial table prepared former EG&G Permitting Manager Gary Harris which, according to plaintiffs, demonstrate that such dairy consumption is, in fact, occurring. The court finds this evidence to be unreliable. While the table appears to identify a family of local dairy consumers, no names or other identifying information is provided. The summary indicates, at most, that local dairy production may have occurred in the past. The court finds more probative Ms. Shilton's testimony that she was unable to locate any persons in the area of TOCDF who presently consume locally produced dairy products.

47. Plaintiffs allege that risk calculations for open burning and open detonation (OB/OD) of chemical weapons at the Depot were improperly omitted from the SRA. However, plaintiffs presented no evidence that OB/OD operations were occurring or would occur within the next year. Ms. Shilton testified in her declaration that DEQ will allow open burning to occur at the Depot only if agent operations at TOCDF have ceased or if emissions from OB/OD could be modeled with the other emissions considered in the RSA to produce a cancer risk no higher than 10 per million. Plaintiffs presented no evidence that either condition has occurred.

48. The SRA models stack emissions for four stacks: the combined stack for the LICs, DFS, and MPF incinerators, the HVACS (ventilation) stack, the Dunnage Incinerator stack, and the CAMDAS stack. Early screening calculations for risks associated with mustard agent (HD) stack emissions assumed that all four stacks would emit both HD and GB continuously at the minimum concentration that would trigger a waste-feed citoff under TOCDF's operating permits. When these early calculations showed a high risk level for HD, the model was revised to assume that HD emissions from the HVACS stack would be at the detection level, 20% of the waste-feed cutoff level. The court finds that this change reflects a more realistic approximation of expected

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HVACS stack emissions. The court also finds that there is no evidence that HD will be processed at TOCDF within the next year. Indeed, according to the revised munitions processing schedule, TOCDF will process only GB-filled M55 rockets and ton containers for at least one year.

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CONCLUSIONS OF LAW

1. Plaintiffs bear the burden of establishing that they are entitled to injunctive relief. To meet their burden, plaintiffs must establish: (1) that they will be irreparably injured unless an injunction issues; (2) that the threatened injury outweighs any damage defendants might suffer; (3) that the injunction, if issued, is not adverse to public interest; and (4) that they have shown a substantial probability of success on the merits. Walmer v. U.S. Department of Defense, 52 F.3d 851, 854 (10th Cir.), cert_denied____U.S.___ 116 S. Ct. 474 (1995). If plaintiffs establish the first three requirements for a preliminary injunction to issue, they may establish likelihood of success by showing "questions going to the merits so serious, substantial, difficult and doubtful, as to make the issues ripe for litigation and deserving of more deliberate investigation." Id. (citing City of Chanute v. Kansas Gas & Elec. Co., 754 F.2d 310, 314 (10th Cir. 1985)).

Irreparable Harm

2. To constitute irreparable harm, an injury must be certain, great, and actual. Wisconsin Gas Co. v. FERC. 758 F.2d 669, 674 (D.C. Cir. 1985). Irreparable harm cannot be speculative; "the injury complained of [must bc] of such *imminence* that there is a 'clear and present' need for equitable relief to prevent irreparable harm." Id. (emphasis in original)(citations and internal quotations omitted): see also Regan v. Vinick & Young, 862 F.2d 896, 902 (1st Cir. 1988) ("[s]peculation or unsubstantiated fears about what may happen in the future cannot provide the basis for a preliminary injunction"). Plaintiffs' claims of irreparable injury relate to; (1) the

alleged public health consequences of the operation of, and emissions from, TOCDF; and (2) defendants' failure to prepare a supplemental environmental impact statement (SEIS), which, according to plaintiffs, constitutes a violation of NEPA.

Operational Risks

3. Plaintiffs assert that the occurrence of several incidents at TOCDF since agent operations began demonstrates that continued operation of the facility poses immediate risks to TOCDF employees, the public, and the environment. The overall record of operations at TOCDF does not support plaintiffs' claim. Although there have been problems at the facility, some of which required the suspension of operations, none of the events caused harm to TOCDF personnel, the public, or the environment. There is no evidence that human injury or environmental harm is inevitable or likely. In fact, the record suggests that TOCDF's safety equipment and procedures are effective in preventing such harms.

4. The evidence presented through John Hall, Donald Smith, and James DeHaven does not undermine this conclusion as it lacks sufficient probative value to be of merit. Likewise, in light of Gary Millar's testimony in his deposition and before the Utah Board that TOCDF was being operated in a safe manner, his November 9, 1996 letter cannot serve as a basis for finding that TOCDF operations pose a risk of irreparable harm.

5. The problems experienced at TOCDF do not demonstrate that the "lessons learned" program is a failure. To the contrary, the evidence indicates that events experienced at JACADS have not recurred at TOCDF and the root causes of incidents at TOCDF were not observed at JACADS.

6. The fact remains that all of the events at TOCDF occurred during the shakedown

period, a phase designed to identify and correct operational difficulties prior to full-scale operations. As testified to by defendants' expert, James Cudahy, such events are to be expected during shakedown operations for any large-scale hazardous waste incinerator. The court finds that the occurrences cited by plaintiffs are too speculative to support a finding of irreparable harm. <u>Risks from Stack Emissions</u>

7. Plaintiffs argue that the presence of nerve agent GB in TOCDF's stack effluent constitutes a direct and present threat to public safety and the environment. However, there has never been a confirmed detection of agent in the stack emissions from TOCDF since agent operations began. Non-zero values for GB reported in the stack particulate analysis relied upon by plaintiffs were well-below the level of quantification of the monitoring equipment, a level that is itself more than five thousand times less than the maximum GB stack concentration permitted by the regulatory scheme. No significant degree of scientific confidence can be placed in the results of the particulate analysis; indeed, the evidence indicates that the positive readings for GB could have benign origins such as machine noise or false positives. The court finds that the asserted risks from emissions of GB from the stacks at TOCDF is too speculative to qualify as irreparable harm to plaintiffs.

8. Plaintiffs' allegations regarding mustard agent emissions cannot support a finding of irreparable harm. The evidence reflects that mustard agent will not be processed at TOCDF before trial on the merits. Thus, plaintiffs will suffer no injury justifying preliminary injunctive relief. Further, while final SRA prepared by DEQ utilized a less conservative model for mustard agent stack emissions than did earlier assessments, the court finds that the revision more accurately reflects the actual operating conditions at TOCDF.

9. Plaintiffs: allegation that the SRA underestimates the risks associated with dioxin exposure is not tantamount to irreparable harm. The elimination of the breast-feeding infant and subsistence farmer scenarios is consistent with EPA guidance for facilities like TOCDF. Further, there is simply no reliable evidence that either scenario applies to the areas surrounding the facility. At most, plaintiffs have shown that the assumptions applied in the SRA may indicate a higher level of risk for some hypothetical persons, not that there exists an actual risk to actual persons from projected emissions levels.

10. The SRA's omission of risk calculations for open burning/open detonation at TOCDF does not support a finding of irreparable barm. Neither activity currently occurs at TOCDF, and plaintiffs produced no evidence that OB/OD operations would commence before trial. The court finds that the asserted risks of harm due to dioxin exposure are too speculative to constitute irreparable harm to plaintiffs.

11. Having carefully considered all of these factors, the court concludes that neither the plaintiffs nor the public will suffer irreparable harm from TOCDF emissions.

NEPA Harm

12. The purpose of NEPA is to focus "government and public attention on the environmental effects of proposed agency action." <u>Marsh v. Oregon Natural Resources Council</u>, 490 U.S. 360, 371 (1989). To this end, NEPA requires federal agencies to consider all information prior to taking an action which might have significant environmental effects. Id. Plaintiffs contend that defendants' failure to supplement the 1989 environmental impact statement (EIS) violates NEPA and constitutes irreparable harm. As discussed more fully in the court's examination of plaintiffs' likelihood of success on the merits, plaintiffs' "new" information did not

require the preparation of a supplemental environmental impact statement. However, even if defendants' decision not to generate a SEIS did violate NEPA, "pending final resolution of this case, such injury will occur during only a small portion of the expected operating lifetime of TOCDF, and is therefore relatively minimal." <u>CWWG I</u>, 935 F. Supp. at 1216.

Balancing of Harms - Public Interest

13. In this case, the interests of both plaintiffs and defendants coincide with different elements of public interest. Plaintiffs assert that the public interest requires a suspension of operations at TOCDF pending trial; defendants assert the public interest lies in disposing of the stockpile of lethal chemical agent and munitions stored at the Depot. It is true that halting agent operations at TOCDF could have negative consequences for defendants, including a loss of proficiency in operations and a risk to employees during decontamination of "hot" portions of the facility. However, these harms are best considered in the analysis of where the public interest lies. Indeed, the public has an interest in the safe and efficient operation of TOCDF, and TOCDF personnel are, of course, members of the public.

14. In <u>CWWG I</u>, the court found that the risks of continued storage outweigh the risks of operation of TOCDF during the period before trial. 935 F. Supp. at 1216-17. This conclusion has been strengthened by changes made by defendants in the munitions processing schedule. During the approximately one-year period before trial, the Army will continue to process the volatile GB nerve agent, the source of the majority of the risk from potential stockpile accidents. Reorganizing the munitions processing campaigns to destroy higher risk munitions earlier in the schedule, starting with GB, will reduce the overall stockpile risks faster than would have occurred under the previous schedule. Further, the risks from potential accidental releases of chemical

agent are minimized by allowing agent disposal activities at TOCDF to continue. Gary Boyd, author of the QRA for TOCDF, concluded that as of February 1997, when the bulk of GB in the stockpile remained unprocessed, a one-year delay in agent operations would approximately double the risk to the population surrounding TOCDF.

15. There is no general presumption that a NEPA violation will in all cases outweigh other public interests. See Fund for Animals. Inc. v. Luian. 962 F.2d 1391, 1400 (9th Cir. 1992); <u>Concerned Citizens v. Secretary of Transportation</u>. 641 F.2d 1, 7-8 (1st Cir. 1981); <u>Southern</u> <u>Utah Wilderness Alliance v. Thompson</u>. 811 F. Supp. 635, 641 (D. Utah 1993). Here, even if defendants' failure to prepare an SEIS violated NEPA, this harm is outweighed by the harm to the public by allowing an injunction to issue.

16. Congress has mandated that the nation's stockpile of lethal chemical weapons be destroyed and has designated the U.S. Department of the Army to carry out this directive. Pub. L. 99-145 (codified as amended at 50 U.S.C. § 1521 (1996)). The deadline for destruction of the stockpile, originally set for 1994, has been extended to December 31, 2004, less than eight years from now. Pub. L. 102-484 (1993). This Congressional mandate is further evidence of the public's interest in the prompt disposal of the stockpile.

17. Having carefully considered all of these factors, the court concludes that the harms balance in favor of defendants and that the public interest is best served by the continued destruction of chemical agent at TOCDF.

Likelihood of Success on the Merits

18. A federal agency's duties under NEPA do not end when an initial decision is made or when an EIS is prepared. Marsh, 490 U.S. at 371-72. Rather, there are circumstances which

require an agency to supplement and EIS. According to regulations promulgated by the Council on Environmental Quality, an EIS must be supplemented if an "agency makes substantial changes in a [project] that are relevant to environmental concerns; or . . . [if] there are significant new circumstances or information relevant to environmental concerns and bearing on the [project] or its impacts." 40 C.F.R. § 1502.9(c)(1)(i) & (ii) (1996); <u>see also Marsh</u> 490 U.S. at 374 ("[i]f there remains major Federal action to occur, and if the new information is sufficient to show that the remaining action will affec[t] the quality of the human environment in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared" (citations and internal quotations omitted)). Not all new information requires a SEIS; information must be "significant" to trigger the need for supplementation. <u>See Wisconsin Y. Weinherger</u>, 745 F.2d 412, 420 (7th Cir. 1984) (duty to supplement EIS not triggered simply because information is "worthy of further inquiry or may be considered important research").

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19. The court's review of the Army's decision not to prepare a SEIS is narrow. Marsh, 490 U.S. at 378. "[S]o long as the [Army's] decision not to supplement the [EIS] was not 'arbitrary and capricious,' it should not be set aside." Id. at 377. Because the question is a factual one that implicates the agency's technical expertise, the court must defer to the agency's informed discretion. Id. Such deference is not automatic. In this, as in every case involving an agency's decision to not prepare a SEIS, the court must review the record and satisfy itself "that the agency has made a reasoned decision based on its evaluation of the significance -- or lack of significance -- of the new information." Id. at 378.

20. The new evidence which plaintiffs claim mandates a SEIS is not significant information. The operational problems encountered at TOCDF caused no injury to workers or

the environment, were quickly remedied, and were the type of events common to the startup of a complex industrial facility. The evidence from the EG&G employees, when closely examined, has little probative value. The evidence regarding the dangers from emissions from the stacks is either not "new," having been previously considered by the court, or is speculative and of little merit. In short, the evidence presented by plaintiffs does not present "a seriously different picture of the likely environmental consequences of TOCDF." Weinberger, 745 F.2d at 420. Accordingly, the court finds that the Army's decision not to prepare a SEIS was not arbitrary and capricious.

Conclusion

21. In light of the above analysis, the court finds that plaintiffs have failed to show that they or the public will be irreparably harmed during the pendency of this action. The court also finds that the public interest favors continued operation of TOCDF and that plaintiffs have failed to show a sufficient likelihood of success on the merits to support a preliminary injunction. Plaintiffs' second motion for a preliminary injunction is therefore DENIED.

DATED this 24 day of March, 1997.

BY THE COURT:

TENA CAMPBELL United States District Judge

ATTACHMENT C

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF UTAH UNITED STATES COURT OF APPEALS April 22, 1997

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FILED United States Court of Appes Tenth Circuit

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UNITED STATES COURT OF APPEALS

PATRICK FISHER Clerk

TENTH CIRCUIT

CHEMICAL WEAPONS WORKING GROUP, INC. (CWWG): SIERRA CLUB: and VIETNAM VETERANS OF AMERICA FOUNDATION.

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Plaintiffs - Appellants.

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UNITED STATES DEPARTMENT OF THE ARVIY: UNITED STATES DEPARTMENT OF DEFENSE: and EG&G DEFENSE MATERIAL. INC..

Defendants - Appellees.

No. 96-4166

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF UTAH (D.C. No. 96-CV-425)

Richard E. Condit (Mick G. Harrison, GreenLaw, Berea, Kentucky; Randall M. Weiner, Ecological Consultants for the Public Interest, Boulder, Colorado; Robert Ukeiley; R. Paul Van Dam, Jonez, Waldo, Holbrook & McDonough, Salt Lake City, Utah, with him on the briefs). GreenLaw, Berez, Kentucky, for Plaintiffs-Appellants.

Craig D. Galli (David W. Tundermann with him on the brief), Parsons Behle & Latimer, Salt Lake City, Utah, for the Defendant-Appellee EG&G Defenso Material, Inc.

Peter A. Appel (Edward J. Shawaker, Alan D. Greenberg, Robert H. Foster, Charles W. Findlay. Lisa Ann Holden, and Robert L. Klarquist, Department of Justice, Scott M. Matheson, Jr., United States Anomey; Stephen Roth, Assistant United States Anomey; Lois J. Schiffer, Assistant Attorney General, with him on the brief), Department of Justice, Washington, D.C., for Defendants-Appellees United States Department of the Army and United States Department of Defense.

Before PORFILIO, EBEL and HENRY, Circuit Judges.

PORFILIO, Circuit Judge.

In this appeal. Appellants Chemical Weapons Working Group, Inc., Sierra Club, and Vietnam Veterans of America Foundation (Plaintiffs) argue that the district court erred in denying their request for a preliminary injunction and in dismissing their claims under the Clean Water Act, Resource Conservation and Recovery Act, 1986 Department of Defense Authorization Act, and Administrative Procedures Act. Finding none of their arguments persuasive, we affirm.

Ϊ.

In 1985, Congress directed the Department of Defense to destroy the nation's stockpile of lethal chemical weapons, which is currently located at Johnston Island in the Pacific Ocean and at eight different sites in the continental United States. One of these sites. Tooele Chemical Agent Disposal Facility near Tooele, Utah, stores just over 40% of the nation's 30,000 tons of chemical warfare agent. Tooele's stockpile consists of both nerve and blister agents contained in a variety of bulk containers and munitions, some of which contain "energetics" (explosives and propellants) that also require disposal. This appeal results from a dispute over how to best implement the 1985 mandate: by

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incinerating the chemical weapons immediately or by storing them pending the development of feasible incineration alternatives.

In 1986, the Army completed and circulated a Draft Environmental Impact Statement, which considered the environmental consequences of continued storage of the nation's chemical weapons stockpile compared to different logistical arrangements for its immediate disposal. The following year, the Army completed a quantitative risk assessment, concluding that the accident risk associated with continued stockpile storage significantly ourweighed that associated with disposal operations. The Army used this assessment to support its 1988 Final Programmatic Environmental Impact Statement and Record of Decision, which selected on-site incineration as the means by which chemical weapons would be destroyed nationiwide. At that time, the Army rejected alternatives to incineration as either unreasonable or premature. In 1989, the Army issued a site-specific Final Environmental Impact Statement and Record of Decision for Tooele, adopting the 1988 Final Programmatic Environmental Impact and choosing onsite incineration as the method of destroying the chemical weapons and choosing on-

Before allowing the Army to proceed with its incineration plan. Congress required it to conduct Operational Verification Testing of the Johnston Atoll Chemical Agent Disposal System. a full-scale, operational chemical weapons incineration plant on Johnston Island that was designed to serve as the prototype for incinerators at other stockpile sites such as Tooele. In 1993, the Secretary of Defense certified to Congress

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that testing at Johnston Atoll was complete, verifying that the operation there had been a success. The MITRE Corporation, a private contractor, was engaged by the Army to monitor, evaluate and report its operational testing results. The National Research Council's Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (Stockpile Committee) was also chartered to monitor the Army's testing at Johnston Atoll and to review the test results reported by the MITRE Corporation. In its 1993 report, the MITRE Corporation concluded that although improvements could be made in the incineration technology used, Johnston Atoll bad "no apparent fundamental safety, environmental, or process-related problems." Similarly, the Stockpile Committee in 1994 that although Johnston Atoll bad some operational problems, none were "show stoppers" for other chemical incineration plants.

In 1994, the Stockpile Committee also issued a report endorsing the Army's choice of incineration as the means by which to destroy the nation's chemical weapons stockpile. In that report, the Committee found there was no fessible alternative to incineration for the destruction of energetics, although it recommended that the Army update its 1987 quantitative risk assessment and continue to evaluate alternative technologies for sites other than Tooele. The Stockpile Committee report also considered the chronic health risks associated with routine incineration operations, concluding that alternative technologies would affect only a fraction of the releases caused by incineration and that "any reduction in disposal risk afforded by an alternative technology will be more than

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offset by the larger cumulative risk from extended storage." The Committee therefore recommended that disposal operations proceed without delay. In response to the Stockpile Committee's report, the Army performed a site-specific quantitative risk assessment for Tooele in 1995, again concluding that the accident-associated risk of continued stockpile storage significantly outweighed that of incineration operations,¹

In May 1996, Plaintiffs brought this action, alleging violations of various environmental protection acts. In one of those allegations, Plaintiffs claimed that the Army violated the National Environmental Policy Act by failing to prepare a Supplemental Environmental Impact Statement on the basis of significant new information relevant to environmental concerns. The Army responded in part by preparing a Record of Environmental Consideration in July 1996, which concluded that no new, significant information had developed since its 1988 Final Programmatic Environmental Impact Statement and 1989 site-specific Final Environmental Impact Statement were issued that would require the preparation of a supplemental environmental statement. Attached to the Record of Environmental Consideration was an 84-page report evaluating new information on dioxin emissions and alternative technologies. This report also discussed the problems experienced at Johnston Atoll,

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¹Specifically, the 1995 assessment found that the accident risk associated with 11 days of continued stockpile storage approximated that associated with 6.2 years of incineration operations. For individuals living closest to Tooele, the fatallty risk from accidents was found to be 100 times greater for continued stockpile storage versus incineration operations.

concluding that although the operation there had not been perfect, it had safely and effectively disposed of chemical agent and had not resulted in significant environmental impacts not already contemplated.

Presently, the Army has all permits necessary to operate Tooele. The Utah Department of Environmental Quality has issued both Clean Air Act and Resource Conservation and Recovery Act permits under its delegated authority from the Environmental Protection Agency. The Army has thus far conducted two trial burns at Tooele without chemical agent to determine whether the facility can destroy agent and other materials without releasing a significant amount of toxins into the environment. The Utah Department of Environmental Quality has approved the results of both tests. Presumably, the Army is now in the process of conducting trial burns with live agent, the results of which must also be approved by Utah before Tooele can become fully operational.

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After extensive hearings, the district court denied Plaintiffs' request for a preliminary injunction of the Army's scheduled incineration operations at Tooele because none of the requirements for injunctive relief had been more. First, the court found Plaintiffs had failed to establish irreparable harm because the health risks associated with the Army's incineration operations were too speculative, while Plaintiffs' allegation of a National Environmental Policy Act violation was, without more, insufficient to meet the

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irreparable harm requirement. Next, the court found Plaintiffs had failed to meet the balance of harms requirement for injunctive relief, relying principally on the Army's 1987 and 1995 quantitative risk assessment results. Finally, the district court held Plaintiffs were unlikely to prevail on the metits of their claim under the National Environmental Policy Act because the Army's 1996 Record of Environmental Consideration was entitled to deference and because the Army was entitled to rely on its own experts in determining whether a Supplemental Environmental Impact Statement was warranted.

We review a district court's denial of a preliminary injunction for abuse of discretion. Lundgrin v. Claytor. 619 F.2d 61, 63 (10th Cir. 1980). "An abuse of discretion occurs only when the trial court bases its decision on an erroneous conclusion of law or where there is no rational basis in the evidence for the ruling." In re Courdinated Pretrial Proceedings in Petro, Prod. Antierust Litig., 669 F.2d 620, 623 (10th Cir. 1982). Because a preliminary injunction is an extraordinary remedy. "the right to relief must be clear and unequivocal." SCFC ILC, Inc. v. Visa USA, Inc. 936 F.2d 1096, 1098 (10th Cir. 1991).

To obtain injunctive relief, a party must establish that: (1) it will suffer irreparable injury unless an injunction is issued: (2) its threatened injury outweighs any harm the proposed injunction may cause to the opposing party; (3) it will likely prevail on the ments of the litigation; and (4) an injunction, if issued, would not be adverse to the public

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interest. Lundgrin. 619 F.2d at 63. Because the district court's balance of harms analysis is dispositive on this point of appeal, we consider it first.

" On appeal. Plaintiffs argue that the district court's balance of harms finding is clearly erroneous because it overestimates the accident-related risk of continued storage. while underestimating the chronic health-related risks of routine incineration operations. We disagree. Although Plaintiffs' evidence on the health-related risks of short-term dioxin exposure is significant, we cannot conclude that the district court's finding on this issue is without any rational basis. To the contrary, the court's conclusion is amply supported by the results of the Army's 1987 and 1995 quantitative risk assessments as well as the Stockpile Committee's 1994 report, which specifically considered the healthrelated risks associated with routine incineration operations, We therefore affirm the district court's denial of Plaintiffs' request for a preliminary injunction on the basis of its 'balance of harms finding, obviating the need to address Plaintiffs' other arguments justifying a preliminary injunction in this instance. Because we conclude the district court properly denied injunctive relief, we also do not address Plaintiffs' claim that a remand is necessary to consider the effect a preliminary injunction would have on the public interest.

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¹ We note, however, that any duty the district court had to consider the public interest was discharged implicitly in its balance of harms analysis. See Autoskill, Inc. v. National Educ. Support Sys., Inc., 994 F.2d 1476, 1499 (10th Cir. 1993) (district court implicitly addressed public interest requirement for injunctive relief).

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Plaintiffs next argue the district court erred in holding § 301(f) of the Clean Water Act does not apply to Tooele's stack emissions, dismissing their count under that section for failure to state a claim upon which relief can be granted. Plaintiffs reason that § 301(f)'s ban on the discharge of chemical warfare agent into navigable waters must apply to Tooele's stacks because the text of that provision places no limitation on the form of chemical agent discharged or on the manner in which it enters navigable waters. Absent such limitations, Plaintiffs urge us to read § 301(f) broadly to include discharge by way of atmospheric deposition to effectuate congressional intent to keep the nation's navigable waters clean.

We review de novo a district court's dismissal of a cause of action for failure to state a claim upon which relief can be granted. Edwards v. International Union, United Plant & Guard Workers of Am., 46 F.3d 1047, 1050 (10th Cir. 1995). As is true when we construe any statute, the plain language of the provision controls absent an irrational result. Edwards v. Valdez, 789 F.2d 1477, 1481 (10th Cir. 1986). We must also construe apparently conflicting statutes harmoniously where possible. United States v. State of Calo., 990 F.2d 1565, 1575 (10th Cir. 1993). Because Plaintiffs' interpretation of § 301(f) of the Clean Water Act is inconsistent with congressional intent, leads to irrational results, and creates a conflict between the Clean Water Act and Clean Air Act, we decline to construe that provision in the broad manner proposed by Plaintiffs. Section 301(f) of the Clean Water Act provides that "it shall be unlawful to discharge any radiological, chemical, or biological warfare agent, any high-level radioactive waste, or any medical waste into the navigable waters." 33 U.S.C. § 1311(f). Because both parties agree that § 301(f)'s ban is absolute, application of this provision to Tooele's stack emissions would effectively shut down its incineration operations indefinitely. This result, however, is completely at odds with congressional knowledge, approval, and funding of incineration as the baseline technology for destroying chemical weapons since 1986, when the Army first submitted its disposal program to Congress. We therefore reject Plaintiffs' proposed construction of § 301(f) because it is clearly inconsistent with congressional intent to implement Tooele's incineration plan.

We also reject Plaintiffs' construction of § 301(f) of the Clean Water Act because it would lead to irrational results. Because Clean Water Act § 301(a) regulates the discharge of any pollutant into navigable waters, see §§ 1311(a), 1362(12), Plaintiffs' broad construction of the phrase "discharge . . . into the navigable waters" under § 301(f) would necessarily result in regulation under § 301(a) of any air emission that might possibly result in atmospheric deposition into navigable waters. While Plaintiffs argue that the Environmental Protection Agency could issue a nationwide permit "for sources of water pollution such as cars and chimneys" to the extent § 301(a) would apply, the very thought of regulating car emissions under the Clean Water Act exposes the absurdity of their position. Tellingly, Plaintiffs also fail to cite a single instance in which stack

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emissions are regulated under the Clean Water Act. We therefore conclude that under the facts of this case, they are not. Although Plaintiffs may be correct in arguing that an object may fly through the air and still be "discharged . . . into the navigable waters" under the Clean Water Act. common sense dictates that Tooele's stack emissions constitute discharges into the air-not water-and are therefore beyond § 301(f)'s reach.¹

Finally, we reject Plaintiffs' proposed construction of § 301(f) because in this instance, it would create a regulatory conflict between the Clean Water Act and Clean Air Act. Plaintiffs do not deny that under delegated authority by the Environmental Protection Agency. Utah has issued the Army a Clean Air Act permit for Tooele to discharge limited amounts of chemical warfare agent particles into the atmosphere. Because Tooele's Clean Air Act permit specifically allows the discharges that Plaintiffs claim are barred under Clean Water Act § 301(f), applying that provision to Tooele's stack emissions would create an irreconcilable conflict between the two regulatory

^{&#}x27;Likewise, we reject Plaintiffs' claim that Tooele's stack emissions constitute discharge into navigable waters because in other instances, this court has recognized jurisdiction under the Clean Water Act where pollutants were discharged into ground or surface water that in turn flowed into navigable water. See, e.g., Quivira Mining Co. v. United States Envil. Proc. Agency. 765 F.2d 126 (10th Cir. 1985). Without determining the precise jurisdictional limits of the Clean Water Act, we hold only that Tooele's stack emissions, unlike other indirect discharges, lack the requisite nexus to navigable waters to render them subject to regulation under that statute.

regimes." We decline Plaintiffs' invitation to create such a conflict, especially since the pollution effects of aunospheric deposition are expressly considered and regulated under the Clean Air Act. See, e.g., 42 U.S.C. § 7403(e)(4) (requiring Environmental Protection Agency to evaluate "The effects of air pollution on water quality"); §§ 7651(a)-(o) (regulating pollution sources of acid rain). We therefore hold that § 301(f) of the Clean Water Act does not apply to Topele's stack emissions because they do not constitute discharge into navigable waters, despite the broad language and policy goals of that provision, See also Train v. Colorado Pub. Interest Research Group, Inc., 426 U.S. 1 (1976) (radioactive materials regulated under Pederal Water Pollution Control Act do not include substances slready subject to regulation under the Atomic Energy Act, despite the absence of limiting language in statute). As a result, we do not address the Army's alternative arguments that § 301(f) is inapplicable because Tooele does not discharge chemical warfare agent and because any discharge into navigable waters does not come from a discernable point source.

[&]quot;We defenestrate plaintiffs' suggestion that the Army's Clean Air Act permit is somehow inferior to the result required under the Clean Water Act because it was issued by the Utah Department of Environmental Quality, rather than the Environmental Protection Agency. Under the Clean Air Act, this distinction is without a difference because Utah had federally-delegated authority and employed permit standards no less stringent than those promulgated by the Environmental Protection Agency. § 7412(1)(1).

Plaintiffs next argue the district court erred in dismissing their imminent hazard claim under the Resource Conservation and Recovery Act for lack of subject matter jurisdiction. The district court reasoned that Plaintiffs' claim was essentially a collateral attack on the Army's permit under the Act because it challenged Utah's finding in issuing the permit that Tooele's incineration operations would not constitute an imminent hazard to human health or the environment. As a result, the court held that Plaintiffs' claim was barred under 42 U.S.C. § 6972(b)(2)(D), which expressly forbids citizen suits to restrain or enjoin the issuance of Resource Conservation and Recovery Act permits.

Plaintiffs argue the district court's ruling should be reversed because they are anempting to enjoin permitted activities that create an imminent hazard, not the issuance of a Resource Conservation and Recovery Act permit. According to Plaintiffs, that Act's citizen suit provision for imminent hazards must allow claims against permitted activity because another citizen suit provision already allows for claims against facilities operating in violation of permit conditions or without any permit at all. Plaintiffs additionally maintain that Tooele's permit specifically states that compliance with permit conditions does not constitute a defense to an imminent hazard claim under the citizen suit provision. Finally, Plaintiffs argue that reversing the district court in this instance would vindicate the dual-purpose of the imminent hazard citizen suit provision: to grant

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citizens enforcement powers equal to those enjoyed by the Environmental Protection Agency and to prevent all imminent hazards to human health and the environment.

- We review a district court's dismissal of a claim for lack of subject matter jurisdiction de novo. Olguin v. Lucero. 87 F.3d 401, 403 (10th Cir. 1996). Where a statute is susceptible to two meanings, we will choose the one that gives full effect to all of its provisions. Negonson v. Sainuels, 933 F.2d 818, 819 (10th Cir. 1991). aff⁷d 507 U.S. 99 (1993). Because allowing Plaintiffs' imminent hazard claim to proceed in this instance would ignore the Resource Conservation and Recovery Act's ban on suits to enjoin the issuance of permits while undermining its limited provisions for judicial review of permit decisions, we affirm.

Under § 6972(a)(1)(B) of the Resource Conservation and Recovery Act, any person may bring an action against anyone else "who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment." 42 U.S.C. § 6972(a)(1)(B). This provision is limited only by § 6972(b)'s bar on suits "to restrain or enjoin the issuance of a permit." § 6972(b)(2)(D). For individuals desiring to judicially challenge the issuance of a Resource Conservation and Recovery Act permit, § 6976(b) provides for direct appeal of Environmental Protection Agency permit decisions to the circuit court of appeals in which the individual resides within 90 days of the permit decision at issue, unless the

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application for review is based on information that arose after the 90-day period has expired. § 6976(b). All challenged permit decisions are considered under the "arbitrary and capricious" standard of review. *See id.*: 5 U.S.C. § 706. Thus, by its own terms, the Resource Conservation and Recovery Act does not allow collateral attacks on Environmental Protection Agency permit decisions or those of state agencies with federally-delegated authority. *See* § 6976(b) (state-issued permits under the Resource Conservation and Recovery Act have same force and effect as those issued by Environmental Protection Agency).

Because Plaintiffs' imminent hazard claim essentially attacks Utah's decision to issue the Army a Resource Conservation and Recovery Act permit, we conclude that the district court properly refused to recognize jurisdiction under § 6972(b). The Resource Conservation and Recovery Act's implementing regulations provide that the Environmental Protection Agency may not issue a permit for trial burns without first having determined that they "will not present an imminent hazard to human health or the environment." 40 C.F.R. § 270.62(b)(5)(ii). Under Utah's parallel regulatory provisions, the Executive Secretary of the Utah Solid and Hazardous Waste Control Board, a division of the Utah Department of Environmental Quality, was required to make the exact same finding before issuing Tooele's Resource Conservation and Recovery Act permit under its federally-delegated authority. Because Plaintiffs' imminent hazard claim directly challenges this finding, we are unable to construe it as anything other than a collateral

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attack on the Excentive Secretary's permit decision itself. Indeed, recognizing jurisdiction in this case would severely undermine the limited judicial review of agency permit decisions provided under the Resource Conservation and Recovery Act. allowing disgruntled individuals to circumvent the Act's 90-day window for directly challenging such decisions and deferential standard of review. See also Greenpeace, Inc. v. Waste Tech. Indux. 9 F.3d 1174 (6th Cir. 1993) (imminent hazard citizen suit against facility operating within confines of Resource Conservation and Recovery Act permit constitutes impermissible collateral attack on Environmental Protection Agency permit decision); Pulumbo v. Waste Tech. Indus., 989 F.2d 156 (4th Cir. 1993) (same).

Plaintiffs' arguments to the contrary are unpersuasive. While insisting that the focus of their imminent hazard claim is not on the permit process itself. Plaintiffs concede that in this instance, the only consequence of their suit would be to enjoin the Army's operations at Tooele entirely. That being the case, Plaintiffs' claim is indistinguishable from other attempts to enjoin the issuance of the Army's Resource Conservation and Recovery Act permit, although in this case the attempt is made retroactively. Plaintiffs' statutory construction argument based on the text of the Resource Conservation and Recovery Act and Tooele's permit under that Act is equally unpersuasive. Because the Army agrees that an imminent hazard citizen suit may be brought for permitted activity so long as it is based on information not already considered in the permit process Plaintiffs'

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claim that they must be able to sue for permitted activity is, without more, inapposite." While we agree with Plaintiffs that any limitation on the citizen suit provision creates a disparity between the enforcement powers enjoyed by the Environmental Protection Agency and concerned individuals, we conclude that this disparity was created by Congress because only the citizen suit provision is limited by § 6972(b). The Environmental Protection Agency, by contrast, may sue for imminent hazard at any time. See § 6973(a).

We therefore conclude Plaintiffs' imminent hazard claim constitutes an impermissible collateral attack on Utah's decision to issue the Army a Resource Conservation and Recovery Act permit under its federally-delegated authority. Because we hold that the district court properly refused to recognize jurisdiction over this claim under § 6972(b), we do not address the Army's alternative argument that jurisdiction was properly declined on abstention grounds.

'The Army's position on this issue is consistent with that espoused by the Environmental Protection Agency in Shell Oll Company v. Environmental Protection Agency, 950 F.2d 741 (D.C. Cir. 1991). In Shell Oll, the Agency represented to the D.C. Circuit that a Resource Conservation and Recovery Act permit would "narrow the opportunities" for citizen suits, though it would not preclude them entirely. Id. at 763. As a result. Plaintiffs' reliance on this decision is misplaced.

Finally, Plaintiffs argue that the district court erred in dismissing their maximum protection and Operational Verification Testing counts for failure to state a claim upon which relief could be granted. Plaintiffs first contend that the 1986 Department of Defense Authorization Act provides an implied private right of action for their maximum protection claim because it is mandatory in tone and was especially created to benefit the general public, a class to which they belong. Plaintiffs further argue that absent an implied private right of action under the 1986 Act, Congress' maximum protection mandate will have no enforcement mechanism at all. Next, Plaintiffs contend that their maximum protection and Operational Verification Testing counts state a claim under the Administrative Procedures Act because they challenge reviewable agency actions: the Army's decision to commence trial burns at Toocle and its completion and certification of operational testing at Johnston Atoll. According to Plaintiffs, the Army's decision tocommence trial burns is reviewable under the Administrative Procedures Act as either an agency order or informal agency action.

We review the district court's distrissal of Plaintiffs' maximum protection and Operational Verification Testing claims de novo. *Edwards*, 46 F.3d at 1050. In this instance, both claims arise out of language found in the 1986 Department of Defense Authorization Act, codified at 50 U.S.C. § 1521. Section 1521(c) of the 1986 Act requires the Army to provide "maximum protection for the environment [and] the general

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public" in destroying the nation's chemical warfare agent stockpile. 50 U.S.C. § 1521(c)(1)(A). Section 1521(k), which was added in 1989, requires the Army to complete operational testing at Johnston Atoll before destroying chemical weapons elsewhere and to certify to Congress through the Secretary of Defense that such testing has been successfully completed.⁴ §§ 1521(k)(1), (2). Because Plaintiffs fail to convince us that either of their claims present a cause of action under the 1986 Authorization Act or Administrative Procedures Act, we affirm.

We first consider Plaintiffs' contention that the 1986 Defense Authorization Act provides an implied private right of action for their maximum protection claim because. as discussed later, review under the Administrative Procedures Act is available only if there exists no other remedy in court. See 5 U.S.C. § 704. In determining whether an implied private right of action exists under a particular statute, the focus is solely on congressional intent. Somenfeld v. Ciry and County of Denver, 100 F.3d 744, 747 (10th Cir. 1996). Given the indications of congressional intent relied on by Plaintiffs to assert an implied private right of action under the 1986 Authorization Act, we conclude that the Supreme Court's decision in California v. Sierra Club, 451 U.S. 287 (1981), is sufficiently analogous to control on this point of appeal.

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^{*}Plaintiffs' maximum protection claim alleges that the Army's incineration operations do not afford maximum protection to the environment and general public, while their Operational Verification Testing claim alleges that the Army's testing at Johnston Atoll is both inaccurate and incomplete.

In Sierra Club, the Court held the 1899 Rivers and Harbors Appropriation Act did not imply a private right of action, despite the fact that the plaintiffs in that action were members of the class for whom the statute was passed: the general public. *Id.* at 294-95. Commenting on its earlier decision in *Cort v. Ask*, 422 U.S. 66 (1975), the Court explained. "[t]he question is not simply who would benefit from the Act, but whether Congress intended to confer federal rights upon those beneficiaries." *Sierra Club*. 451 U.S. at 294. The Court then concluded the general proscription stated in the 1899 Act was intended to be enforced through "a general regulatory scheme" administered under the then Secretary of War, not through the vindication of private rights. *Id.* at 298.

Given the decision in *Sierra Club*, Plaintiffs have not persuaded us the 1986 Defense Authorization Act provides an implied private right of action just because it is mandatory in tone and was passed to benefit the general public. Because Plaintiffs provide no indication that Congress intended to confer federal rights upon the beneficiaries it identified in the 1986 Act, we cannot conclude it intended for the Army's mandate to be privately enforceable.

Similarly, Plaintiffs are incorrect that absent an implied private right of action. Congress' 1986 maximum protection mandate would be completely unenforceable. Like the 1899 Act considered in *Sierra Club*, Congress' 1986 maximum protection mandate is fully enforceable through a general regulatory scheme, comprised in this instance by the myriad of environmental statutes that regulate the Army's incineration operations at

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Tooele. Recognizing that the Court has been "especially reluctant to imply causes of actions under statutes that create duties on the part of persons for the benefit of the public at large." *Cannon v. University of Chleago*, 441 U.S. 677, 693 n.13 (1979), we affirm the district court's determination that the 1986 Defense Authorization Act does not imply a private right of action for Plaintiffs' maximum protection claim.

We also affirm the district court's determination that it lacked jurisdiction to consider Plaintiffs' maximum protection and Operational Verification Testing claims under the Administrative Procedures Act. Judicial review under the Administrative Procedures Act is available only for "[a]gency action made reviewable by statute and final agency action for which there is no other adequate remedy in a court." 5 U.S.C. § 704. "Agency action" under the Act is defined as "the whole or a part of an agency rule, order, license, sanction, relief, or the equivalent or denial thereof, or failure to act." § 551(13). The term "order" is defined as "the whole or part of a final disposition, whether difirmative, negative, injunctive, or declaratory in form, of an agency in a matter other than rule making but including licensing." § 551(6). Because Plaintiffs' maximum protection and testing claims are not reviewable by stature, they must challenge "final agency action" to confer upon the displet court jurisdiction under the Administrative Procedures Act.

Given the Administrative Procedures Act's definition of the terms "agency action" and "order." we conclude Plaintiffs' maximum protection claim is not reviewable under

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that statute. Assuming Plaintiffs sufficiently apprised the dispict court of the particular agency action they challenge, we nevertheless fail to see how the Army's decision to commence trial burns at Tooele qualifies as final agency action. Plaintiffs provide no indication that the Army has ever revisited the question of how precisely it planned to destroy the chemical weapons at Tocele since its 1989 Final Environmental Impact Statement. That being the case, we have no basis upon which to conclude the Army's actions at Topele after 1989 constitute a "final disposition . . . in a matter," rather than the implementation of a "final disposition" already made. See § 551(6). Because Plaintiffs do not deny 28 U.S.C. § 2401's six-year statute of limitations applies to suits under the Administrative Procedures Act, they are also unable to challenge the Army's 1989 Final Environmental Impact Statement conclusions. See also Sierra Club v. Penfold. 857 F.2d 1307, 1315 (9th Cir. 1988) (six-year general statute of limitations applies to actions under the Administrative Procedures Act). We therefore hold that the district court's dismissal of Plaintiffs' maximum protection claim under the Administrative Procedures Act was proper because it failed to challenge a reviewable agency order,

Plaintiffs' reliance on Anderson & U.S. Department of Housing and Urban Development, 701 F.2d 112 (10th Cir. 1983), to argue in the alternative that the Army's incineration operations constitute "informal agency action" reviewable under the Administrative Procedures Act is misplaced. Although the court in Anderson characterized a decision by the Department of Housing and Urban Development as

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"informal agency action." *Id.* at 113. it did not hold that the Department's decision was therefore something other than "agency action" as defined by the Administrative Procedures Act. To the contrary, the decision not to accept a mortgage assignment could easily be construed as a "final disposition . . . in a matter," thereby qualifying as an agency order under the Administrative Procedures Act.

Plaintiffs' Operational Verification Testing claim under the Administrative Procedures Act is equally without merit because they fail to explain how the Army's operational testing at Johnston Atoll constitutes a "rule, order, license, sanction, relief, or the equivalent or denial thereof, or failure to act." See 5 U.S.C. § 551(13). We also fail to comprehend how the Army's completion of operational testing can qualify as final agency action under the Administrative Procedures Act. Construing the agency action challenged as the Secretary of Defense's certification to Congress that testing was complete is similarly unhelpful. See America Trucking Assoc. v. United States, 755 F.2d 1292, 1297 (7th Cir. 1985) (agency reports do not constitute "agency action" under Administrative Procedures Act because they do not change law or policy); Industrial Sufety Equip. Ass'n, Inc. v. Environmental Protection Agency, 837 F.2d 1115, 1120 (D.C. Cir. 1988) (same). We therefore affirm the district court's dismissal of both claims asserted under the Administrative Procedures Act, along with its rulings on Plaintiffs" first three points of appeal.

AFFIRMED.

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Memorandum

State of Oregon Department of Environmental Quality

Date:	May 20, 1997
То:	Environmental Quality Commission
From:	Environmental Quality Commission Langdon Marsh
Subject:	Agenda Item D. Adoption of Attorney General's Model Rules, EQC Meeting: June 6, 1997

Background

The APA requires all agencies to adopt rules of procedure for use in rulemaking and contested cases. The APA also requires the Attorney General to adopt rules of procedure for petitions by interested persons requesting rulemaking or declaratory rulings by the agency that must be used by agencies. Finally, the APA requires the Attorney General to create model rules of procedure that agencies may adopt in whole or in part in order to meet the legal requirement of agency rules for procedure.

Issue this Proposed Rulemaking Action is Intended to Address

During the periodic rule review that was conducted in late 1996, it was noted that the Department has not adopted the latest version of the Model Rules. Furthermore, the Department has not adopted Model Rule 137-04-080 which relates to procedures for orders in other than contested cases. The Department last adopted the Model Rules in 1988 by adopting the April 1988 version of the Model Rules. Very few staff and even fewer persons outside the agency, have access to the 1988 version of the Attorney General's Model Rules. Updating our rules to conform to the latest version of the Model Rules will reduce confusion for both staff and others.

Summary of Public Input Opportunity

If the Model Rules are adopted without change, under ORS 183.341(1), the Department may adopt the Rules by reference without public comment period or other public input.

Authority to Address the Issue

ORS 183.341(2) requires all agencies subject to the APA to adopt rules of procedure for use in rulemaking and contested cases. Adoption of the Model Rules satisfies this requirement. Furthermore, under ORS 183.390 and 183.410, the Attorney General must promulgate rules for petitions for rulemaking and declaratory judgment. These rules must be adopted as written by all agencies.

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

Memo To: Environmental Quality Commission

Agenda Item D, Adoption of Attorney General's Model Rules, EQC Meeting: June 6, 1997 Page 2

Recommendation for Commission Action

It is recommended that the Commission adopt the rule amendments adopting the Attorney General's Model Rules as amended through January 1, 1996 as presented in Attachment A of the Department Staff Report.

Attachments

- A. Rule (Amendments) Proposed for Adoption
- B. Oregon Revised Statutes, Chapter 183.341, 183.390 and 183.410
- C. Attorney General Model Rules, OAR 137-01-005 through 137-04-080 redlined to indicate changes since April 1988.

Report Prepared By: Susan M. Greco

Phone: (503) 229-5213

Date Prepared: May 20, 1997

RULES OF GENERAL APPLICABILITY AND ORGANIZATION

DIVISION 11

Definitions

340-11-005 The words and phrases used in this Division have the same meaning given them in ORS 183.310. Additional terms are defined as follows unless context requires otherwise

(1) "Adoption" means the carrying of a motion by the Commission with regard to the subject matter or issues of an intended agency action.

(2) "Agency Notice" means publication in OAR and mailing to those on the list as required by ORS 183.335(6).

(3) "Commission" means the Environmental Quality Commission.

(4) "Department" means the Department of Environmental Quality.

(5) "Director" means the Director of the Department or the Director's authorized delegates.

(6) "Filing" means receipt in the office of the Director. Such filing is adequate where filing is required of any document with regard to any matter before the Commission, Department or Director, except a claim of personal liability.

(7) "Model Rules" or "Uniform Rules" means the Attorney General's Uniform and Model Rules of Procedure, OAR 137-01-005 through 137-04-010080 as amended and in effect on January 1, 1996April-29, 1988.

(8) "Presiding Officer" or "Hearing Officer" means the Commission, its Chairman, the Director, or any individual designated by the Commission or the Director to preside in any contested case, public, or other hearing. Any employee of the Department who actually presides in any such hearing is presumptively designated by the Commission or Director, such presumptive designation to be overcome only by a written statement to the contrary bearing the signature of the Commission Chairman or the Director.

Stat. Auth.: ORS 183.341 and 468.020

Hist.: DEQ 69(Temp), f. & ef. 3-22-74; DEQ 72, f. 6-5-74, ef. 6-25-74; DEQ 78, f. 9-6-74, ef. 9-25-74; DEQ 122, f. & ef. 9-13-76; DEQ 25-1979, f. & ef. 7-5-79; DEQ 7-1988, f. & cert. ef. 5-6-88 (and corrected 9-30-88)

183.341

(2) Prior to the adoption of a federal rule or regulation under subsection (1) of this section, the agency shall give notice of the adoption of the rule or regulation, the effective date of the rule or regulation in this state and the subject matter of the rule or regulation in the manner established in ORS 183.335 (1).

(3) After giving notice the agency may adopt the rule or regulation by filing a copy with the Secretary of State in compliance with ORS 183.355. The agency is not required to conduct a public hearing concerning the adoption of the rule or regulation.

(4) Nothing in this section authorizes an agency to amend federal rules or regulations or adopt rules in accordance with federal requirements without giving an opportunity for hearing as required by ORS 183.335. [1979 c.593 §15]

183.340 [1957 c.717 §3 (3); 1971 c.734 §6; repealed by 1975 c.759 §5 (183.341 enacted in lieu of 183.340)]

183.341 Model rules of procedure; establishment; compilation; publication; agencies required to adopt procedural rules. (1) The Attorney General shall prepare model rules of procedure appropriate for use by as many agencies as possible. Any agency may adopt all or part of the model rules by reference without complying with the rulemaking procedures under ORS 183.335. Notice of such adoption shall be filed with the Secretary of State in the manner provided by ORS 183.355 for the filing of rules. The model rules may be amended from time to time by an adopting agency or the Attorney General after notice and opportunity for hearing as required by rulemaking procedures under ORS 183.310 to 183.550.

(2) All agencies shall adopt rules of procedure to be utilized in the adoption of rules and conduct of proceedings in contested cases or, if exempt from the contested case provisions of ORS 183.310 to 183.550, for the conduct of proceedings.

(3) The Secretary of State shall publish in the Oregon Administrative Rules:

(a) The Attorney General's model rules adopted under subsection (1) of this section;

(b) The procedural rules of all agencies that have not adopted the Attorney General's model rules; and

(c) The notice procedures required by ORS 183.335 (1).

(4) Agencies shall adopt rules of procedure which will provide a reasonable opportunity for interested persons to be notified of the agency's intention to adopt, amend or repeal a rule. Rules adopted or amended under this subsection shall be approved by the Attorney General. (5) No rule adopted after September 13, 1975, is valid unless adopted in substantial compliance with the rules adopted pursuant to subsection (4) of this section. [1975 c.759 §6 (enacted in lieu of 183.340); 1979 c.593 §12]

183.350 [1957 c.717 §3 (1), (2); repealed by 1971 c.734 §21]

183.355 Filing and taking effect of rules; filing of executive orders; copies. (1)(a) Each agency shall file in the office of the Secretary of State a certified copy of each rule adopted by it.

(b) Notwithstanding the provisions of paragraph (a) of this subsection, an agency adopting a rule incorporating published standards by reference is not required to file a copy of those standards with the Secretary of State if:

(A) The standards adopted are unusually voluminous and costly to reproduce; and

(B) The rule filed with the Secretary of State identifies the location of the standards so incorporated and the conditions of their availability to the public.

(2) Each rule is effective upon filing as required by subsection (1) of this section, except that:

(a) If a later effective date is required by statute or specified in the rule, the later date is the effective date.

(b) A temporary rule becomes effective upon filing with the Secretary of State, or at a designated later date, only if the statement required by ORS 183.335 (5) is filed with the rule. The agency shall take appropriate measures to make temporary rules known to the persons who may be affected by them.

(3) When a rule is amended or repealed by an agency, the agency shall file a certified copy of the amendment or notice of repeal with the Secretary of State who shall appropriately amend the compilation required by ORS 183.360 (1).

(4) A certified copy of each executive or.. der issued, prescribed or promulgated by the Governor shall be filed in the office of the Secretary of State.

(5) No rule of which a certified copy is required to be filed shall be valid or effective against any person or party until a certified copy is filed in accordance with this section. However, if an agency, in disposing of a contested case, announces in its decision the adoption of a general policy applicable to such case and subsequent cases of like nature the agency may rely upon such decision in disposition of later cases.

(6) The Secretary of State shall, upon request, supply copies of rules, or orders or designated parts of rules or orders, making and collecting therefor fees prescribed by

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Note: 183.362 was added to and made a part of 183.310 to 183.550 by legislative action but was not added to any smaller series therein. See Preface to Oregon Revised Statutes for further explanation.

183.365 Publication of administrative rules in electronic form. (1) Pursuant to ORS 183.360, the Secretary of State shall publish in electronic form administrative rules adopted or amended by state agencies and make the information available to the public and members of the Legislative Assembly.

(2) The Secretary of State shall determine the most cost-effective format and procedures for the timely release of the information described in subsection (1) of this section in electronic form.

(3) Pursuant to ORS 183.360 (2)(b), the Secretary of State shall establish requirements for filing administrative rules adopted or amended by state agencies for entry into computer networks for the purpose of subsection (1) of this section.

(4) Although each state agency is responsible for its information resources, centralized information resource management must also exist to:

(a) Provide public access to the information described in subsection (1) of this section;

(b) Provide technical assistance to state agencies; and

(c) Ensure that the information resources needed to implement subsection (1) of this section are addressed along with the needs of the individual agencies.

(5) Personal information concerning a person who accesses the information identified in subsection (1) of this section may be maintained only for the purpose of providing service to the person.

(6) No fee or other charge may be imposed by the Secretary of State as a condition of accessing the information identified in subsection (1) of this section.

(7) No action taken pursuant to this section shall be deemed to alter or relinquish any copyright or other proprietary interest or entitlement of the State of Oregon relative to any of the information made available pursuant to subsection (1) of this section. [1995 c.614 §5]

Note: 183.365 was enacted into law by the Legislative Assembly but was not added to or made a part of ORS chapter 183 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

183.370 Distribution of published rules. The bulletins and compilations may be distributed by the Secretary of State free of charge as provided for the distribution of legislative materials referred to in ORS 171.236. Other copies of the bulletins and compilations shall be distributed by the Secretary of State at a cost determined by the Secretary of State. Any agency may compile and publish its rules or all or part of its rules for purpose of distribution outside of the agency only after it proves to the satisfaction of the Secretary of State that agency publication is necessary. [1957 c.717 §4 (4); 1959 c.260 §1; 1969 c.174 §4; 1975 c.759 §8; 1977 c.394 §3]

183.380 [1957 c.717 §4 (5); repealed by 1971 c.734 §21]

183.390 Petitions requesting adoption of rules. An interested person may petition an agency requesting the promulgation, amendment or repeal of a rule. The Attorney General shall prescribe by rule the form for such petitions and the procedure for their submission, consideration and disposition. Not later than 30 days after the date of submission of a petition, the agency either shall deny the petition in writing or shall initiate rulemaking proceedings in accordance with ORS 183.335. [1957 c.717 §5; 1971 c.734 §8]

183.400 Judicial determination of validity of rule. (1) The validity of any rule may be determined upon a petition by any person to the Court of Appeals in the manner provided for review of orders in contested cases. The court shall have jurisdiction to review the validity of the rule whether or not the petitioner has first requested the agency to pass upon the validity of the rule in question, but not when the petitioner is a party to an order or a contested case in which the validity of the rule may be determined by a court.

(2) The validity of any applicable rule may also be determined by a court, upon review of an order in any manner provided by law or pursuant to ORS 183.480 or upon enforcement of such rule or order in the manner provided by law.

(3) Judicial review of a rule shall be limited to an examination of:

(a) The rule under review;

(b) The statutory provisions authorizing the rule; and

(c) Copies of all documents necessary to demonstrate compliance with applicable rulemaking procedures.

(4) The court shall declare the rule invalid only if it finds that the rule:

(a) Violates constitutional provisions;

(b) Exceeds the statutory authority of the agency; or

(c) Was adopted without compliance with applicable rulemaking procedures.

(5) In the case of disputed allegations of irregularities in procedure which, if proved, would warrant reversal or remand, the Court

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of Appeals may refer the allegations to a Master appointed by the court to take evidence and make findings of fact. The court's review of the Master's findings of fact shall be de novo on the evidence.

(6) The court shall not declare a rule invalid solely because it was adopted without compliance with applicable rulemaking procedures after a period of two years after the date the rule was filed in the office of the Secretary of State, if the agency attempted to comply with those procedures and its failure to do so did not substantially prejudice the interests of the parties. [1957 c.717 §6; 1971 c.734 §9; 1975 c.759 §9; 1979 c.593 §17; 1987 c.861 §3]

183.410 Agency determination of applicability of rule or statute to petitioner; effect; judicial review. On petition of any interested person, any agency may in its discretion issue a declaratory ruling with respect to the applicability to any person, property, or state of facts of any rule or statute enforceable by it. A declaratory ruling is binding between the agency and the petitioner on the state of facts alleged, unless it is altered or set aside by a court. However, the agency may, where the ruling is adverse to the petitioner, review the ruling and alter it if requested by the petitioner. Binding rulings provided by this section are subject to review in the Court of Appeals in the manner provided in ORS 183.480 for the review of orders in contested cases. The Attorney General shall prescribe by rule the form for such petitions and the procedure for their submission, consideration and disposition. The petitioner shall have the right to submit briefs and present oral argument at any declaratory ruling proceeding held pursuant to this section. [1957 c.717 §7; 1971 c.734 §10; 1973 c.612 §5]

CONTESTED CASES

183.413 Notice to party before hearing of rights and procedure; failure to provide notice. (1) The Legislative Assembly finds that the citizens of this state have a right to be informed as to the procedures by which contested cases are heard by state agencies, their rights in hearings before state agencies, the import and effect of hearings before state agencies and their rights and remedies with respect to actions taken by state agencies. Accordingly, it is the purpose of subsections (2) to (4) of this section to set forth certain requirements of state agencies so that citizens shall be fully informed as to these matters when exercising their rights before state agencies.

(2) Prior to the commencement of a contested case hearing before any agency including those agencies identified in ORS 183.315, the agency shall inform each party to the hearing of the following matters:

(a) If a party is not represented by an attorney, a general description of the hearing procedure including the order of presentation of evidence, what kinds of evidence are admissible, whether objections may be made to the introduction of evidence and what kind of objections may be made and an explanation of the burdens of proof or burdens of going forward with the evidence.

(b) Whether a record will be made of the proceedings and the manner of making the record and its availability to the parties.

(c) The function of the record-making with respect to the perpetuation of the testimony and evidence and with respect to any appeal from the determination or order of the agency.

(d) Whether an attorney will represent the agency in the matters to be heard and whether the parties ordinarily and customarily are represented by an attorney.

(e) The title and function of the person presiding at the hearing with respect to the decision process, including, but not limited to, the manner in which the testimony and evidence taken by the person presiding at the hearing are reviewed, the effect of that person's determination, who makes the final determination on behalf of the agency, whether the person presiding at the hearing is or is not an employee, officer or other representative of the agency and whether that person has the authority to make a final independent determination.

(f) In the event a party is not represented by an attorney, whether the party may during the course of proceedings request a recess if at that point the party determines that representation by an attorney is necessary to the protection of the party's rights.

(g) Whether there exists an opportunity for an adjournment at the end of the hearing if the party then determines that additional evidence should be brought to the attention of the agency and the hearing reopened.

(h) Whether there exists an opportunity after the hearing and prior to the final determination or order of the agency to review and object to any proposed findings of fact, conclusions of law, summary of evidence or recommendations of the officer presiding at the hearing.

(i) A description of the appeal process from the determination or order of the agency.

(3) The information required to be given to a party to a hearing under subsection (2) of this section may be given in writing or orally before commencement of the hearing.

DIVISION 1

MODEL RULES OF PROCEDURE APPLICABLE TO RULEMAKING FUNCTIONS

Notice of Rulemaking

137-01-000 [1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef. 12-3-79; Repealed by JD 2-1986, f. & ef. 1-27-86]

Rulemaking Procedures

137-01-005 The words and phrases used in OAR 137-01-005 to 137-03-092 have the same meanings given them in ORS 183.310.

Stat. Auth.: ORS 183.341 & 183.390 Stats. Implemented: ORS 183.310 & 183.341(1) Hist.: 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86

Public Input Prior to Rulemaking

137-01-007 (1) The agency may seek public input before giving notice of intent to adopt, amend or repeal a rule. Depending upon the type of rulemaking anticipated, the agency may appoint an advisory committee, solicit the views of persons on the agency's mailing list maintained pursuant to ORS 183.335(7), or use any other means to obtain public views to assist the agency.

(2) If the agency appoints an advisory committee, the agency shall make a good faith effort to ensure that the committee's members represent the interests of persons likely to be affected by the rule. The meetings of the advisory committee shall be open to the public and notice of committee meetings shall be provided to persons on the agency's mailing list maintained pursuant to ORS 183.335(7).

(3) Written minutes shall be taken at all advisory committee meetings. The minutes must reflect all of the matters discussed and the views expressed by the participants. The agency's rules coordinator shall maintain copies of the minutes of any meetings of advisory committees appointed pursuant to this rule and any written input received by such committee or the agency concerning the anticipated rulemaking.

Stat. Auth.: ORS 183.341

<u>Stats. Implemented: ORS 183.025(2), 183.330(2) & 183.341(1)</u> Hist.: JD 6-1993, f. 11-1-93, cert. ef. 11-4-93; JD 6-1995, f. 8-25-95, cert. ef. 9-9-95

Contents of Notice of Rulemaking When Public Hearing is Held

137-01-010 [1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81; Repealed by JD 2-1986, f. & ef. 1-27-86]

Rulemaking Format

137-01-011 When the agency proposes to amend an existing rule, the agency shall set forth the rule in full with matter proposed to be deleted enclosed in brackets and proposed additions shown by bold face.

Stat. Auth.: ORS 183.341, 183.390 &192.445

<u>Stats. Implemented: ORS 183.355(2)(D) & 183.341(1)</u> <u>Hist.: JD 1-1988, f. & cert. ef. 3-3-88; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD 7-1991, f. & cert. ef. 11-4-91; JD 6-1993, f. 11-1-93, cert. ef. 11-4-93</u>

Contents of Notice of Rulemaking When Public Hearing Will be Held Only if Requested 137-01-015 [1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef.

12-3-79; 1AG 1-1981, f. & ef. 11-17-81; Repealed by JD 2-1986, f. & ef. 1-27-86]

Submitting Draft of Rule to Legislative Counsel

137-01-017 [1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; Repealed by 1AG 4-1979, f. & ef. 12-3-79]

Limitation of Economic Effect on Businesses

137-01-018 (1) Based upon its economic effect analysis under ORS183.335(2)(b)(D) or upon comments made in response to its rulemaking notice, the agency shall, before adoption of a rule, determine whether the economic effect upon small business is significantly adverse; and

(2) If the agency determines there is a significant adverse effect on a business or businesses, it shall, modify the rule to reduce the rule's adverse economic impact on those businesses to the extent consistent with the public health and safety purposes of the rule.

(3) Modification to reduce the rule's adverse economic impact on small business shall be as provided in ORS183.540.

Stat. Auth.: ORS Ch. 183 Stats. Implemented: ORS 183.341(1) & 183.540 Hist.: 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86

Postponing Intended Action

137-01-020 [1AG 14, f. & ef. 10-22-75; 1AG 4-1979, f. & ef. 12-3-79; Repealed by JD 2-1986, f. & ef. 1-27-86]

Conduct of Rulemaking Hearings

137-01-030 (1) The hearing to consider a rule shall be conducted by and shall be under the control of the presiding officer. The presiding officer may be the chief administrative officer of the agency, a member of its governing body, or any other person designated by the agency.

(2) If the presiding officer or any decision maker has a potential conflict of interest as defined in ORS 244.020(4), that officer shall comply with the requirements of ORS-Chapter 244 (e.g., ORS 244.120 and 244.130). At the beginning of the hearing, any person wishing to be heard shall provide name, address and affiliation to the presiding officer. The presiding officer may also require that the person complete a form showing any other information the presiding officer.

(3) At the commencement of the hearing, any person wishing to be heard shall provide name, address, and affiliation to the presiding officer. Additional persons may be heard at the discretion of the presiding officer. The presiding officer may require that the witness complete a form to

indicate the name of the witness, whether the witness favors or opposes the proposed action, and such other information as the presiding officer may deem appropriate. (4) At the commencement beginning of the hearing, the presiding officer may summarize the content of the notice given under ORS 183 335, unless requested by a person present to read the notice in full.

(5)(4) Subject to the discretion of the presiding officer, the order of the presentation shall be:

(a) Statements of proponents;

(b) Statements of opponents; and

(c) Statements of other witnesses present and wishing to be heard.

(6)(5) The presiding officer or any member of the agency may question any witness making a statement at the hearing. The presiding officer may permit other persons to question witnesses.

(7)(6) There shall be no rebuttal or additional statement given by any witness unless requested or permitted by the presiding officer. The presiding officer may allow an opportunity for reply.

(8)(7) The hearing may be continued with recesses as determined by the presiding officer until all listed witnesses have had an opportunity to testify.

(9)(8) The presiding officer shall, when practicable, receive all physical and documentary evidence presented by witnesses. Exhibits shall be marked and shall identify the witness offering the exhibit. Any written exhibits shall be preserved by the agency pursuant to any applicable retention schedule for public records under ORS 192.001 et seq.

(10)(9) The presiding officer may set reasonable time limits for oral presentation and may exclude or limit cumulative, repetitious, or immaterial matter.

(10) The presiding officer may provide for a verbatim oral, written; or mechanical record to be made of all the proceedings, or in the alternative, may provide for a record in the form of minutes. shall make a record of the proceeding, by audio or video tape recording, stenographic reporting or minutes.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.335(3) & 183.341(1)

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 1-1988, f. & cert. ef. 3-3-88; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD7-1991, f. & cert. ef. 11-4-91

Presiding Officer's Report-Rulemaking Record

137-01-040 Upon request by the agency, the presiding officer shall, within a reasonable time after the hearing, provide the agency with a written summary of statements given and exhibits received and a report of the officer's observations of physical experiments, demonstrations, or exhibits. The presiding officer may make recommendations, but such recommendations are not binding upon the agency.

(1) The agency shall maintain a record of any data or views its receives in response to a notice of intent to adopt, amend or repeal a rule.

(2) If a hearing is held, the agency may require the presiding officer, within a reasonable time after the hearing, to provide the agency a written summary of statements given and exhibits received and a report of the officer's observations of physical experiments, demonstrations, or exhibits. The presiding officer may make recommendations but such recommendations are not binding upon the agency. The rulemaking record shall contain the presiding officer's summary, or a recording of oral submissions received at the hearing, and the presiding officer's recommendation,

1 :

<u>if any.</u>

(3) The rulemaking record shall be maintained by the rules coordinator. The agency shall make the rulemaking record available to members of the public upon request.

Stat. Auth.: ORS 183.341

Stats. Implemented: ORS 183.335(3), 183.341(1) & OR Laws 1993, Ch 729, §14 Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 6-1993, f. 11-1-93, cert. ef. 11-4-93; JD 7-1995, f. 8-25-95, cert. ef. 1-1-96

Action of Agency Agency Rulemaking Action

137-01-050 At the conclusion of the hearing, or after receipt of the presiding officer's requested report and recommendation, if any, the agency may adopt, amend, or repeal rules covered by the notice of intended action. The agency shall fully consider all written and oral submissions.

Stat. Auth.: ORS Ch. 183 Stats. Implemented: ORS 183.335(3) Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86

Notice of Agency Action; Certification to Secretary of State Rule Filing

137-01-060 (1) The agency shall file in the office of the Secretary of State a certified copy of each rule adopted, including rules that amend or repeal any rule.

(2) The rule shall be effective upon filing with the Secretary of State unless a different effective date is required by statute or a later effective date is specified in the rule.

Stat. Auth.: ORS Ch. 183

Stats. Implemented: ORS 183.341(1) & 183.355

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef. 12-3-79; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89

Petition to Promulgate, Amend, or Repeal Rule

137-01-070 NOTE: OAR 137-01-070 was adopted by the Attorney General as required by ORS 183.390. Agencies must apply this rule without further adoption or amendment.

(1) An interested person may petition an agency to adopt, amend, or repeal a rule. <u>The petition</u> shall state the name and address of the petitioner and any other person known to the petitioner to <u>be interested in the rule</u>. The petition shall be legible, signed by or on behalf of the petitioner, and shall contain a detailed statement of:

(a) The rule petitioner requests the agency to adopt, amend, or repeal. When a new rule is proposed, the petition shall set forth the proposed language in full. When an amendment of an existing rule is sought proposed, the affected portion of the rule shall be set forth in the petition in full with matter proposed to be deleted enclosed in brackets and proposed additions shown by underlining or boldface;

(b) Facts or arguments in sufficient detail to show the reasons for and effects of adoption, amendment, or repeal of the rule;

(c) All propositions of law to be asserted by petitioner;

(d) Sufficient facts to show the effect of adoption, amendment, or repeal of the rule;

(e) The name and address of petitioner and of any other person known by the petitioner to be interested in the rule sought to be adopted, amended, or repealed.

(2) The petition, shall be deemed filed when received by the agency. The agency:

(a) May provide a copy of the petition, together with a copy of the applicable rules of practice, to all persons named in the petition;

(b) May schedule oral presentations;

(c) Shall, in writing, within 30 days after receipt of the petition, either deny the petition or initiate rulemaking proceedings

(3) Upon receipt of the petition, the agency:

(a) May provide a copy of the petition, together with a copy of the applicable rules of practice, to all persons named in the petition;

(b) May-schedule oral presentations;

(c) Shall, in writing, within 30 days after date of submission of the petition, either deny the petition or initiate rulemaking proceedings in accordance with rule 137-01-018 to 137-01-080.

Stat. Auth.: ORS 183.390

Stats. Implemented: ORS 183.341(1) & 183.390

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 1-1981, f. & ef. 11-17-81; JD 6-1983, f. 9-23-83, ef. 9-26-83; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD7-1991, f. & cert. ef. 11-4-91; JD 6-1995, f. 8-25-95, cert. ef. 9-9-95

Temporary Rulemaking <u>Requirements</u>

137-01-080 (1) If no notice has been provided before adoption of a temporary rule, the agency shall give notice of its temporary rulemaking to persons, entities, and media specified under ORS 183.335(1) by mailing or personally delivering to each of them a copy of the rule or rules as adopted and a copy of the statements required under ORS 183.335(5). If a temporary rule or rules are over ten pages in length, the agency may provide a summary and state how and where a copy of the rule or rules may be obtained. Failure to give this notice shall not affect the validity of any rule.

(2) <u>The agency shall file with the Secretary of State a certified copy of the temporary rule and a copy of the statement required by ORS 183.335(5).</u>

(3) A temporary rule is effective for less-than 180 days, unless if a shorter period is specified in the temporary rule, or for 180 calendar days if the rule does not specify a shorter period.

Stat. Auth.: ORS 183.341

Stats. Implemented: ORS 183.335(5), 183.341(1), 183.355 & Or. Laws 1993, Ch. 729 §6 Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81; JD 6-1983, f. 9-23-83, ef. 9-26-83; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD7-1991, f. & cert. ef. 11-4-91; JD 6-1993, f. 11-1-93, cert. ef. 11-4-93; JD 7-1995, f. 8-25-95, cert. ef. 1-1-96

Periodic Rule Review

137-01-085 (1) Pursuant to ORS 183.545, the agency shall review and analyze all of its rules at least once every three years, including rules reviewed during prior reviews and rules adopted after the last review.

(2) As part of the review the agency shall invite public comment upon the rules <u>and shall give</u> notice of the review in accordance with pursuant to ORS 183.335(1).

(3) The notice shall identify the rules under review by rule or division number and subject matter. It shall state that the agency invites written comments concerning the continued need for the rule; the complexity of the rule; the extent to which the rule duplicates, overlaps, or conflicts with other state rules, federal regulations, and local government regulations; the degree to which technology, economic conditions, or other factors have changed in the subject area affected by the rule; the rule's potential for enhancement of job-producing enterprises; and the legal basis for the rule. (4) The notice shall state the date by which written comments must be received by the agency

and the address to which the comments should be sent.

(5) If the agency provides a public hearing to receive oral comments on the rules, the notice shall include the time and place of the hearing.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1), 183.545, 183.550; Or Laws 1992, Ch. 15 and Or Laws 1995, Ch. 535

Hist.: 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD7-1991, f. & cert. ef. 11-4-91

Notice for Periodic Review of Rules

137-01-090 [1AG 1-1981, f. & ef. 11-17-81; Repealed by JD 2-1986, f. & ef. 1-27-86]

DIVISION 2

MODEL RULES OF PROCEDURE APPLICABLE TO PROCEEDINGS FOR AGENCY DECLARATORY RULINGS

Institution of Proceedings for Declaratory Rulings

137-02-000 [1AG 14, f. & ef. 10-22-75; Repealed by JD 2-1986, f. & ef. 1-27-86]

[ED. NOTE: OAR 137-02-010 to 137-02-060 were adopted by the Attorney General as required by ORS 183.410. Agencies must apply these rules without further adoption or amendment.]

Petition for Declaratory Ruling-Contents of Petition

137-02-010 The petition to institute initiate proceedings for declaratory rulings shall contain:

(1) The rule or statute that may apply to the person, property, or state of facts;

(2) A detailed statement of the relevant facts; including sufficient facts to show petitioner's interest;

(3) All propositions of law or contentions asserted by petitioner;

(4) The questions presented;

(5) The specific relief requested; and

(6) The name and address of petitioner and of any other person known by petitioner to be interested in the requested declaratory ruling.

Stat. Auth.: ORS Ch. 183 Stats. Implemented: ORS 183.410 Hist.: 1AG 14, f. & ef. 10-22-75; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89

Filing and Service of Declaratory Ruling Petition

137-02-020 (1) The petition shall be deemed filed when received by the agency.

(2) Within 60 days after the petition is filed the agency shall notify the petitioner in writing whether it will issue a ruling. If the agency decides to issue a ruling, it shall serve all persons named in the petition by mailing:

(a) A copy of the petition together with a copy of the agency's rules of practice; and

(b) Notice of any proceeding including the hearing at which the petition will be considered. (See OAR 137-02-030 for contents of notice.)

(3) Notwithstanding section (2) of this rule, the agency may decide at any time that it will not issue a declaratory ruling in any specific instance. The agency shall notify the petitioner in writing when the agency decides not to issue a declaratory ruling.

Stat. Auth.: ORS Ch. 183

Stats. Implemented: ORS 183.410

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89

Intervention in Declaratory Rulings

137-02-025 (1) Any person or entity may petition the agency for permission to participate in the proceeding as a party.

(2) The petition for intervention shall be in writing and shall contain:

(a) The rule or statute that may apply to the person, property, or state of facts;

(b) A statement of facts sufficient to show the intervenor's interest;

(c) A statement that the intervenor accepts the petitioner's statement of facts for purposes of the declaratory ruling;

(d) All propositions of law or contentions asserted by the intervenor;

(e) A statement that the intervenor accepts the petitioner's statement of the questions presented or a statement of the questions presented by the intervenor;

(f) A statement of the specific relief requested.

(3) The agency may, in its discretion, invite any person or entity to file a petition for intervention.

(4) The agency, in its discretion, may grant or deny any petition for intervention. If a petition for intervention is granted, the status of the intervenor(s) shall be the same as that of an original petitioner, i.e. the declaratory ruling, if any, issued by the agency shall be binding between the intervenor and the agency on the facts stated in the petition, subject to review as provided in ORS 183.410

(5) The decision to grant or deny a petition for intervention shall be in writing and shall be served on all parties.

Stat. Auth.: ORS Ch. 183.410 Stats. Implemented: ORS 183.410

Hist.: JD 5-1989, f. 10-5-89, cert. ef. 10-15-89; JD 6-1995, f. 8-25-95, cert. ef. 9-9-95

Contents of Notice of Declaratory Ruling Hearing

137-02-030 The notice of proceeding hearing for a declaratory ruling shall set forth:

(1) A <u>Be accompanied by a</u> copy of the petition requesting the declaratory ruling <u>and by a copy of</u> any petition for intervention if copies of these petitions have not previously been served on the party:

(2) The Set forth the time and place of the proceeding; and

(3) The designation of Identify the presiding officer.

Stat. Auth.: ORS Ch. 183

Stats. Implemented: ORS 183.410

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89

Conduct of Hearing, Briefs, and Oral Argument-Declaratory Ruling Procedure

137-02-040 (1) The proceeding shall be conducted by and shall be under the control of the presiding officer. The presiding officer may be the chief administrative officer of the agency, a member of its governing body or any other person designated by the agency.

(2) No testimony or other evidence shall be accepted at the hearing. The petition will be decided on the facts stated in the petition, except that the presiding officer may agree to accept, for consideration by the agency, a statement of alternative facts if such a statement has been stipulated to in writing by all parties to the proceeding, including any intervening parties.

(3) At the proceeding, petitioner The parties and any other interested party agency staff shall have the right to present oral argument. The presiding officer may impose reasonable time limits on the time allowed for oral argument. Petitioner, The parties and agency staff, and interested persons may file briefs in support of their respective positions. The presiding officer shall fix the time and order of filing briefs and may direct that the briefs be submitted prior to oral argument. The presiding officer may permit the filing of memoranda following the hearing.

(4) The proceeding may be conducted in person or by telephone.

(5) As used in this rule, "telephone" means any two-way electronic communication device.

Stat. Auth.: ORS 183.410

Stats. Implemented: ORS ORS 183.410

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD 6-1993, f. 11-1-93, cert. ef. 11-4-93; JD 6-1995, f. 8-25-95, cert. ef. 9-9-95

Presiding Officer's Proposed Declaratory Ruling-Opinion

137-02-050 (1) Except when the presiding officer is the decision maker, the presiding officer shall prepare an opinion a proposed declaratory ruling in accordance with OAR 137-02-060 for consideration by the decision maker.

(2) When a proposed declaratory ruling is considered by the decision maker, the parties and agency staff shall have the right to present oral argument to the decision maker.

Stat. Auth.: ORS Ch. 183

Stats. Implemented: ORS 183.410

Hist.: 1AG 14, f. & ef. 10-22-75; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89

Issuance of Declaratory Ruling

137-02-060 (1) The agency shall issue its declaratory ruling within 60 days of the close of the record proceeding or within 60 days of the time permitted for the filing of briefs, whichever is later.

(2) The ruling shall be in writing and shall include:

(a) The facts upon which the ruling is based;

(b) The statute or rule in issue;

(c) The agency's conclusion as to the applicability of the statute or rule to those facts;

(d) The agency's conclusion as to the legal effect or result of applying the statute or rule to those facts;

(e) The reasons relied upon by the agency to support its conclusions;

(f) A statement that under ORS 183,480 the parties may obtain judicial review by filing a petition with the Court of Appeals within 60 days from the date the declaratory ruling is served.
(3) The ruling shall be served by mailing a copy to the parties.

Stat. Auth.: ORS Ch. 183

Stats. Implemented: ORS 183.410

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89

Effect of Agency Ruling

137-02-070 [1AG 14, f. & ef. 11-22-75; Repealed by JD 2-1986, f. & ef. 1-27-86]

DIVISION 3

MODEL RULES OF PROCEDURE APPLICABLE TO CONTESTED CASES

Contested Case Defined

137-03-000 [1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81; Repealed by JD 2-1986, f. & ef. 1-27-86]

Contested Case Notice

137-03-001 (1) In addition to the requirement of ORS 183.415(2), a contested case notice may include a statement that the record of the proceeding to date, including, information in the agency file or files on the subject of the contested case, automatically become part of the contested case record upon default for the purpose of proving a prima facie case.

(2) Except as otherwise required by law, the <u>The</u> contested case notice shall include a statement that if a request for hearing is not received by the agency within 21 days of the date of mailing or other service of the notice the time stated in the notice, the person shall have waived the right to a

hearing under ORS Chapter 183, except as provided in OAR 137-03-075(6) and (7)(4).

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1), 183.413 & 183.415(6)

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef. 12-3-79; JD 2-1986, f. & ef. 1-27-86; JD 1-1988, f. & cert. ef. 3-3-88; JD 7-1991, f. & cert. ef. 11-4-91

Rights of Parties in Contested Cases

137-03-002 (1) In addition to the information required to be given under ORS 183.413(2) and 183.415(7), before commencement of a contested case hearing, the agency shall inform a party, if the party is an agency, corporation, or an unincorporated association, that such party must be represented by an attorney licensed in Oregon, unless statutes applicable to the contested case proceeding specifically provide otherwise.

(2) Except as otherwise required by ORS 183.415(7), the information referred to in section (1) of this rule may be given in writing or orally before the commencement of the hearing.

(3) Unless precluded by law, informal disposition may be made of any contested case by stipulation, agreed settlement, consent order, or default. Informal settlement may be made in license revocation proceedings by written agreement of the parties and the agency consenting to a suspension, fine, or other form of intermediate sanction. Upon the agreement of the agency and the parties, and unless otherwise precluded by law, alternative methods of dispute resolution may be used in contested case matter. Such alternative methods of resolution may include non-binding arbitration, modified contested case proceedings, nonrecord abbreviated hearings or any collaborative method designed to encourage the agency and the parties to work together to develop a mutually agreeable solution, such as negotiation, mediation, use of a neutral facilitator or settlement conferences, but may not include binding arbitration.

(4) Unless precluded by law, informal disposition includes, upon agreement between the agency and the parties, but is not limited to, a modified contested case proceeding, nonrecord abbreviated hearing, nonbinding arbitration, and mediation, but does not include binding arbitration. Final disposition of contested cases may be by a final hearing order or, unless precluded by law, by stipulation, agreed settlement, consent order or final order by default. Informal settlement may be made in license revocation proceedings by written agreement of the parties and the agency consenting to a suspension, fine or other form of intermediate sanction.

Stat. Auth :: ORS 183.341

Stats. Implemented: ORS 9.320, 183.341(1), 183.413, 183.415 & 183.502 Hist.: 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 6-1995, f. 8-25-95, cert. ef. 9-9-95

Late Filing

137-03-003 (1) Unless otherwise provided by law, when a person fails to file any document within the time specified by agency rules or these model rules of procedure, the late filing may be accepted if the agency or presiding officer determines that the cause for failure to file the document timely was beyond the reasonable control of the party.

(2) The agency may require a statement explaining the reasons for the late filing.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1)

Hist.: JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD 7-1991, f. & cert. ef. 11-4-91

Request by Person to Participateion as Party or Limited Party

137-03-005 (1) When an agency gives notice that it intends to hold a contested case hearing, persons who have an interest in the outcome of the agency's proceeding or who represent a public interest in such result may request to participate as parties or limited parties.

(2) A person requesting to participate as a party or limited party shall file a petition with the agency at least 21 days before the date set for the hearing and shall include a sufficient number of copies of the petition for service on all parties with the agency at least 21 days before the date set for the hearing. Petitions untimely filed shall not be considered unless the agency determines that good cause has been shown for failure to file timely.

(3) The petition shall include the following:

(a) Names and addresses of the petitioner and of any organization the petitioner represents;

(b) Name and address of the petitioner's attorney, if any;

(c) A statement of whether the request is for participation as a party or a limited party, and, if as a limited party, the precise area or areas in which participation is sought;

(d) If the petitioner seeks to protect a personal interest in the outcome of the agency's proceeding, a detailed statement of the petitioner's interest, economic or otherwise, and how such interest may be affected by the results of the proceeding;

(e) If the petitioner seeks to represent a public interest in the results of the proceeding, a detailed statement of such public interest, the manner in which such public interest will be affected by the results of the proceeding, and the petitioner's qualifications to represent such public interest;

(f) A statement of the reasons why existing parties to the proceeding cannot adequately represent the interest identified in subsection (3)(d) or (e) of this rule.

(4) The agency shall serve a copy of the petition on each party personally or by mail. Each party shall have seven days from the date of personal service or agency mailing to file a response to the petition.

(5) If the agency determines <u>under OAR 137-03-003</u> that good cause has been shown for failure to file a timely petition, the agency at its discretion may:

(a) Shorten the time within which answers to the petition shall be filed; or

(b) Postpone the hearing until disposition is made of the petition.

(6) If a person is granted participation as a party or a limited party, the agency may postpone or continue the hearing to a later date if necessary to avoid an undue burden to one or more of the parties in the case when it appears that commending or continuing the hearing would jeopardize or unduly burden one or more of the parties in the case.

(7) In ruling on petitions to participate as a party or a limited party, the agency shall consider:

(a) Whether the petitioner has demonstrated a personal or public interest that could reasonably be affected by the outcome of the proceeding;

(b) Whether any such affected interest is within the scope of the agency's jurisdiction and within the scope of the notice of contested case hearing;

(c) When a public interest is alleged, the qualifications of the petitioner to represent that interest;

(d) The extent to which the petitioner's interest will be represented by existing parties.

(8) A petition to participate as a party may be treated as a petition to participate as a limited party.

(9) The agency has discretion to grant petitions for persons to participate as a party or a limited party. If the agency grants a petition, tThe agency shall specify areas of participation and procedural limitations as it deems appropriate.

(10) An agency ruling on a petition to participate as a party or as a limited party shall be by written order and served promptly on the petitioner and all parties. If the petition is allowed, the agency shall also serve petitioner with the notice of rights required by ORS 183.413(2).

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1), 183.415(4) & 183.450(3)

Hist.: 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef. 12-3-79; JD 2-1986, f. & ef. 1-27-86; JD 1-1988, f. & cert. ef. 3-3-88; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD 7-1991, f. & cert. ef. 11-4-91

Agency Participation as Interested Agency or Party

137-03-007 (1) When an agency gives notice that it intends to hold a contested case hearing, it may also notify the parties that it intends to name any other agency that has an interest in the outcome of that proceeding as a party or as an interested agency, either on its own initiative or upon request by that other agency.

(2) An agency named as a party or as an interested agency has the same procedural rights and shall be given the same notices, including notice of rights, as any party in the proceeding. Each party shall have seven days from the date of personal service or mailing of the notice to file objections.

(3) The agency decision to name an agency as a party or as an interested agency shall be by written order and served promptly on the parties and the named agency.

(4) An agency named as a party or as an interested agency has the same procedural rights and shall be given the same notices as any party in the proceeding. An interested agency, unlike a party, has no right to judicial review.

(5) An agency may not be named as a party under this rule without written authorization of the Attorney General.

Stat. Auth.: ORS Ch. 180, 183.341 & 183.390 Stats. Implemented: ORS 180.060, 180.220, 183.341(1) & 183.415(4) Hist.: JD 2-1986, f. & ef. 1-27-86; JD 7-1991, f. & cert. ef. 11-4-91

Authorized Representative in Designated Agencies

137-03-008 (1) For purposes of this rule, the following words and phrases have the following meaning:

(a) "Agency" means State Landscape Contractors Board, Office of Energy and the Energy Facility Siting Council, Environmental Quality Commission and the Department of Environmental Quality; Insurance Division of the Department of <u>Consumer and Business Services</u> Insurance and Finance-for proceedings in which an insured appears pursuant to ORS 737.505; <u>the State Fire</u> Marshal Division of the Executive Department-in the Department of State Police; Division of State Lands for proceedings regarding the issuance or denial of fill or removal permits under ORS 541.605 to 541.685; Public Utility Commission; Water Resources Commission and the Department of

Land Conservation and Development; and State Department of Agriculture for purposes of hearings under ORS 215.705;

(b) "Authorized Representative" means a member of a partnership, an authorized officer or regular employee of a corporation, association or organized group, or an authorized officer or employee of a governmental authority other than a state agency;

(c) "Legal Argument" includes arguments on:

(A) The jurisdiction of the agency to hear the contested case;

(B) The constitutionality of a statute or rule of the application of a constitutional requirement to an agency;

(C) The application of court precedent to the facts of the particular contested case proceeding.

(d) "Legal Argument" does not include presentation of evidence, examination and cross-examination of witnesses or presentation of factual arguments or arguments on:

(A) The application of the facts to the statutes or rules directly applicable to the issues in the contested case;

(B) Comparison of prior actions of the agency in handling similar situations;

(C) The literal meaning of the statutes or rules directly applicable to the issues in the contested case;

(D) The admissibility of evidence or the correctness of procedures being followed.

(2) A party or limited party participating in a contested case hearing before an agency listed in subsection (1)(a) of this rule may be represented by an authorized representative as provided in this rule if the agency has by rule specified that authorized representatives may appear in the type of contested case hearing involved.

(3) On or before the first appearance by an authorized representative as defined in subsection (1)(b) of this rule, Before appearing in the case, an authorized representative must provide the presiding officer with a letter authorizing the named representative to appear on behalf of a party or limited party.

(4) The presiding officer may limit an authorized representative's presentation of evidence, examination and cross-examination of witnesses, or presentation of factual arguments to insure the orderly and timely development of the hearing records, and shall not allow an authorized representative to present legal argument as defined in subsection (1)(c) of this rule.

(5) When an authorized representative is representing a party or limited party in a hearing, the presiding officer shall advise such representative of the manner in which objections may be made and matters preserved for appeal. Such advice is of a procedural nature and does not change applicable law on waiver or the duty to make timely objection. Where such objections may involve legal argument as defined in this rule, the presiding officer shall provide reasonable opportunity for the authorized representative to consult legal counsel and permit such legal counsel to file written legal argument within a reasonable time after conclusion of the hearing.

Stat. Auth.: ORS 183.457

Stats. Implemented: ORS 183.341(1) & 183.457

Hist.: JD 4-1987(Temp), f. & ef. 7-22-87; JD 1-1988, f. & cert. ef. 3-3-88; JD7-1991, f. & cert. ef. 11-4-91; JD 6-1993, f. 11-1-93, cert. ef. 11-4-93; JD 6-1995, f. 8-25-95, cert. ef. 9-9-95

[ED. NOTE: The text of Temporary Rules is not printed in the Oregon Administrative Rules Compilation. Copies may be obtained from the adopting agency or the Secretary of State.]

Agency Represented by Officer or Employee

137-03-009 [JD 4-1987(Temp), f. & ef. 7-22-87]

Emergency License Suspension, Refusal to Renew

137-03-010 (1) If the agency finds there is a serious danger to the public health or safety, it may immediately suspend or refuse to renew a license. For purposes of this rule, such a decision is referred to as an emergency suspension order. An emergency suspension order is a written order which is not a final order under ORS chapter 183 must be in writing An emergency suspension order is not an order in a contested case and may be issued without prior notice to the licensee or an opportunity for a hearing as required for contested cases under ORS Chapter 183.

(2)(a) Except where the danger to the public health or safety is so imminent that opportunity for the licensee to object under section (3) of this rule is not practicable as determined by the agency, the agency shall provide the licensee with notice and opportunity to object prior to issuing the emergency suspension order. For purposes of this rule, this notice is referred to as a presuspension notice.

(b) The presuspension notice shall:

(A) Specify the acts of the licensee and the evidence available to the agency which <u>Describe</u> generally the acts of the licensee and the circumstances that would be grounds for revocation, suspension or refusal to renew the license under the agency's usual procedures;

(B) <u>Specify Describe generally</u> the reasons why the acts of the licensee <u>and the circumstances</u> seriously <u>and immediately</u> endanger the public's health or safety;

(C) Identify a person in the agency whom the licensee may contact and who is authorized to issue the emergency suspension order or to make recommendations regarding the issuance of the emergency suspension order.

(c) The agency may provide the presuspension notice to the licensee in writing, orally by telephone or in person, or by any other means available to the agency.

(d) Where the presuspension notice is given orally, the agency subsequently shall provide the licensee with a written copy of the notice.

(3) Following the presuspension notice, the agency shall provide the licensee an immediate opportunity to object to the agency's specifications provided in the presuspension notice respond to the presuspension notice before a person authorized to issue the emergency suspension order or to make recommendations regarding the issuance of the emergency suspension order. An emergency suspension order may be issued anytime thereafter.

(4)(a) When the agency issues an emergency suspension order, the agency shall serve the order on the licensee either personally or by registered or certified mail.

(b) The order shall include the following statements:

(A) Those required under ORS 183.415(2) and (3);

(B) That the licensee has the right to demand a hearing to be held as soon as practicable to contest the emergency suspension order;

(C) That if the demand for hearing is not received by the agency within 90 days of the date of notice of the emergency suspension order the licensee shall have waived its right to a hearing under ORS Chapter 183;

(D) The effective date of the emergency suspension order;

(E) The specifications noted in subsection (2)(b) of this rule Findings of the specific acts or

omissions of the licensee that are grounds for revocation, suspension or refusal to renew the license, and the reasons these acts or omissions seriously and immediately endanger the public's health or safety; and

(F) That with the agreement of the licensee and the agency the hearing opportunity on the emergency suspension order the agency may be combined the hearing on the emergency suspension order with any other agency proceeding affecting the license. The procedures for a combined proceeding shall be those applicable to the other proceeding affecting the license.

(5)(a) If timely requested by the licensee pursuant to subsection (4)(b) of this rule, the agency shall hold a hearing on the emergency suspension order as soon as practicable.

(b) At the hearing, the agency shall consider the facts and circumstances including, but not limited to:

(A) Whether at the time of issuance of the order there was probable cause to believe from the evidence available to the agency that there were ground for revocation, suspension or refusal to renew the license under the agency's usual procedures. (B) Whether the acts or omissions of the licensee pose a serious danger to the public's health or safety; and

(C)(B) Whether circumstances at the time of the hearing justify confirmation, alteration or revocation of the order.

(D) Whether the agency followed the appropriate procedures in issuing the emergency suspension order.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1) & 183.430 Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; JD 2-1986, f. & ef. 1-27-86; JD 1-1988, f. & cert. ef. 3-3-88; JD 7-1991, f. & cert. ef. 11-4-91

Orders When No Hearing Requested or Failure to Appear

137-03-020 [1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 1-1981, f. & ef. 11-17-81; Repealed by JD 2-1986, f. & ef. 1-27-86]

Discovery in Contested Cases

137-03-025 (1) In it discretion, the agency may order discovery by the agency and any party in appropriate cases. This rule does not require the agency to authorize any discovery. If the agency does authorize discovery, the agency shall control the methods, timing and extent of discovery, but nothing in this rule prevents informal exchanges of information.

(2) Discovery may include but is not limited to one or more of the following:

(a) Depositions;

(b) Disclosure of names and addresses of witnesses expected to testify at the hearing;

(c) Production of documents, which may but need not be limited to documents which the party producing the documents plans to offer as evidence;

(d) Production of objects for inspection or permission to enter upon land to inspect land or other property;

(e) Requests for admissions;

(f) Written interrogatories;

(g) Prehearing conferences, as provided in this rule.

(3) Before requesting a discovery order, a party must seek the discovery through an informal

exchange of information.

(4)(a) A party that seeks to take the testimony of a material witness by deposition shall file a written request with the agency. The request shall set forth the name and address of the witness, a showing a materiality of the witness's testimony, an explanation of why a deposition rather than informal or other means of discovery is necessary, and a request that the witness's testimony be taken before an officer named in the request for the purpose of recording testimony;

(b) For all other forms of discovery, a request for a discovery order must be in writing and must include a description of the attempts to obtain the requested discovery informally. The request shall be mailed or delivered to the agency, with a copy to other parties. The agency shall consider any objections by the party from whom discovery is sought.

(5) Any discovery request must be reasonably likely to produce information that is generally relevant to the case. If the relevance of the requested discovery is not apparent, the agency may require the party requesting discovery to explain how the request is likely to produce relevant information. If the request appears to be unduly burdensome, the agency may require an explanation of why the requested information is necessary or is likely to facilitate resolution of the case.

(6) The agency shall issue an order granting or denying a discovery request in whole or in part.

(7) Only the agency may issue subpoenas in support of discovery. The agency may apply to the circuit court to compel obedience to a subpoena.

(8) The presiding officer may refuse to admit evidence which has not been disclosed in response to a discovery order, unless the party that failed to provide discovery offers a satisfactory reason for having failed to do so or unless excluding the evidence would violate the duty to conduct a full and fair inquiry under ORS 183.415(10). If the presiding officer admits evidence which was not disclosed as ordered, the presiding officer may grant a continuance to allow an opportunity for the agency or other party to respond.

(9) The agency may delegate its authority to order and control discovery to a presiding officer. The delegation must be in writing, and it may be limited to specified forms of discovery.

Stat. Auth.: ORS 183.341 & 183.390

<u>Stats. Implemented: ORS 183.341(1) & 183.425</u> <u>Hist.: JD 7-1991, f. & cert. ef. 11-4-91</u>

Subpoenas, Depositions

137-03-030 [1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81; Repealed by JD 2-1986, f. & ef. 1-27-86]

Prehearing Conferences

137-03-035 (1) Prior to hearing, the agency may, in its discretion, conduct one or more prehearing conferences to facilitate the conduct and resolution of the case. The agency may convene the conference on its own initiative or at a party's request.

(2) The purposes of a prehearing conference may include, but are not limited to, one or more of the following:

(a) To facilitate discovery and to resolve disagreements about discovery;

(b) To identify, simplify and clarify issues;

(c) To eliminate irrelevant issues;

(d) To obtain stipulations of fact;

(e) To provide to the presiding officer, agency and parties, in advance of the hearing, copies of all documents intended to be offered as evidence at the hearing and the names of all witnesses expected to testify;

(f) To authenticate documents;

(g) To decide the order of proof and other procedural matters pertaining to the conduct of the hearing; and

(h) To discuss settlement or other resolution or partial resolution of the case.

(3) The prehearing conference may be conducted in person or by telephone.

(4) The agency must make a record of any stipulations, rulings and agreements. The agency may make an audio or stenographic record of the pertinent portions of the conference or may place the substance of stipulations, rulings and agreements in the record by written summary. Stipulations to facts and to the authenticity of documents and agreements to narrow issues shall be binding upon the agency and the parties unless good cause is shown for rescinding a stipulation or agreement. Settlement discussions shall not be made a part of the record, except to the extent that the discussions result in agreement.

(5) After the hearing begins, the presiding officer may at any time recess the hearing to discuss any of the matters listed in section (2) of this rule.

(6) The agency may delegate to the presiding officer the discretion to conduct prehearing conferences.

Stat. Auth : ORS 183.341 & 183.390

<u>Stats. Implemented: ORS 183.341(1), 183.430 & 183.502</u> <u>Hist.: JD 7-1991, f. & cert. ef. 11-4-91</u>

Conducting Contested Case Hearing

137-03-040 (1) The contested case hearing shall be conducted by and under the control of the presiding officer. The presiding officer may be the chief administrative officer of the agency, a member of its governing body, or any other person designated by the agency.

(2) If the presiding officer or any decision maker has an actual or potential conflict of interest as defined in ORS 244.020(1) or (7), that officer shall comply with the requirements of ORS Chapter 244 (e.g., ORS 244.120 and 244.130).

(3) The hearing shall be conducted, subject to the discretion of the presiding officer, so as to include the following:

(a) The statement and evidence of the proponent in support of its action;

(b) The statement and evidence of opponents, interested agencies, and other parties; except that limited parties may address only subjects within the area to which they have been limited;

(c) Any rebuttal evidence;

(d) Any closing arguments.

(4) Presiding officers or decision makers, <u>agency representatives</u>, interested agencies, and parties shall have the right to question witnesses. However, limited parties may question only those witnesses whose testimony may relate to the area or areas of participation granted by the agency.

(5) The hearing may be continued with recesses as determined by the presiding officer.

(6) The presiding officer may set reasonable time limits for oral presentation and may exclude or limit cumulative, repetitious, or immaterial matter.

(7) Exhibits shall be marked and maintained by the agency as part of the record of the proceedings.

(8) If the presiding officer or any decision maker receives any written or oral ex parte communication on a fact in issue during the contested case proceeding, that person shall notify all parties and otherwise comply with the requirements of OAR 137-03-055.

Stat. Auth.: ORS 183.341

Stats. Implemented: ORS 183.341(1), 183.415(9) & 183.462

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 4-1979, f. & ef. 12-3-79; JD 2-1986, f. & ef. 1-27-86; JD 7-1991, f. & cert. ef. 11-4-91; JD 6-1995, f. 8-25-95, cert. ef. 9-9-95

Telephone Hearings

137-03-045 (1) Unless precluded by law, the agency may, in its discretion, hold a hearing or portion of a hearing by telephone. Nothing in this rule precludes an agency from allowing some parties or witnesses to attend by telephone while others attend in person.

(2) The agency may direct that a hearing be held by telephone upon request or on its own motion.
 (3) The agency must make an audio or stenographic record of any telephone hearing.

(4) Prior to commencement of an evidentiary hearing that is held by telephone, each party shall provide to all other parties and to the agency copies of documentary evidence that it will seek to introduce into the record.

(5) Nothing in this rule precludes any party from seeking to introduce documentary evidence in addition to evidence described in section (4) of this rule during the telephone hearing and the presiding officer shall receive such evidence, subject to the applicable rules of evidence, if inclusion of the evidence in the record is necessary to conduct a full and fair hearing. If any evidence introduced during the hearing has not previously been provided to the agency and to the other parties, the hearing may be continued upon the request of any party or the agency for sufficient time to allow the party or the agency to obtain and review the evidence.

(6) The agency may delegate to the presiding officer the discretion to rule on issues raised under this rule.

(7) As used in this rule, "telephone" means any two-way electronic communication device.

 Stat. Auth.: ORS 183.341, 183.390 &192.445

 2Stats. Implemented: ORS 183.341(1)

 Hist.: JD 6-1993, f. 11-1-93, cert. ef. 11-4-93

Evidentiary Rules

137-03-050 (1) Evidence of a type commonly relied upon by reasonably prudent persons in the conduct of their serious affairs shall be admissible.

(2) Irrelevant, immaterial, or unduly repetitious evidence shall be excluded.

(3) All offered evidence, not objected to, will be received by the presiding officer subject to the officer's power to exclude irrelevant, immaterial, or unduly repetitious matter.

(4) Evidence objected to may be received by the presiding officer. Rulings on its admissibility or exclusion, if not made at the hearing, shall be made on the record at or before the time a final order is issued.

(5) Any time ten (10) days or more before a hearing, the agency, any interested agency, and any

party may serve upon every party, interested agency, and the agency a copy of any affidavit, certificate, or other document proposed to be introduced in evidence. Unless cross-examination is requested by the affiant, certificate preparer, or other document preparer or custodian, within five (5) days prior to hearing the affidavit, certificate, or other document may be offered subject to the same standards and received with the same effect as oral testimony. The presiding officer shall accept an offer of proof made for excluded evidence. The offer of proof shall contain sufficient detail to allow the reviewing agency or court to determine whether the evidence was properly excluded. The presiding officer shall have discretion to decide whether the offer of proof is to be oral or written and at what stage in the proceeding it will be made. The presiding officer may place reasonable limits on the offer of proof, including the time to be devoted to an oral offer or the number of pages in a written offer.

(6) If cross-examination is requested of the affiant, certificate preparer, or other document preparer or custodian as provided in section (5) of this rule, and the requestor is informed within five (5) days prior to the hearing that the requested witness will not appear for cross-examination, the affidavit, certificate, or other document may be received in evidence, if the agency or presiding officer determines that the party requesting cross-examination would not be unduly prejudiced or injured by lack of cross-examination.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1), 183.415(11) & 183.450

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 4-1979, f. & ef. 12-3-7; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD1-1988, f. & cert. ef. 3-3-88; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD 7-1991, f. & cert. ef. 11-4-91

Ex Parte Communications

137-03-055 (1) An ex parte communication is an oral or written communication to an agency decision maker or the presiding officer not made in the presence of all parties to the hearing, concerning a fact in issue in the proceeding, but does not include communication from agency staff or counsel about facts in the record.

(2) If an agency decision maker or presiding officer receives an ex parte communication during the pendency of the proceeding, the officer shall:

(a) Give all parties notice of the substance of the communication, if oral, or a copy of the communication, if written; and

(b) Provide any party who did not present the ex parte communication an opportunity to rebut the substance of the ex parte communication at the hearing, at a separate hearing for the limited purpose of receiving evidence relating to the ex parte communication, or in writing.

(3) The agency's record of a contested case proceeding shall include:

(a) The ex parte communication, if in writing;

(b) A statement of the substance of the ex parte communication, if oral;

(c) The agency or presiding officer's notice to the parties of the ex parte communication; and

(d) Rebuttal evidence.

Stat. Auth.: ORS Ch. 183 Stats. Implemented: ORS 173,341(1), 183.415(9) & 183.462 Hist.: JD 2-1986, f. & ef. 1-27-86; JD 1-1988, f. & cert. ef. 3-3-88

Contested Cases — Orders and Default Orders — Rehearing and Reconsideration

Proposed Orders in Contested Cases, Filing Exceptions and Argument, an Adoption of Order

137-03-060 (1) If a majority of the officials who are to render the final order in a contested case have neither attended the hearing nor reviewed and considered the record, and the order is adverse to a party, a proposed order including findings of fact and conclusions of law shall be served upon the parties.

(2) When the agency serves a proposed order on the parties, the agency shall at the same time or at a later date notify the parties:

(a) When written exceptions must be filed to be considered by the agency; and

(b) When and in what form argument may be made to the officials who will render the final order.

(3) The agency decision maker, after receiving exceptions and argument, may adopt the proposed order or prepare a new order.

(4) Nothing in this rule prohibits the staff of a non-party agency from commenting on the proposed order.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1), 183.460 & 183.464

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-75; 1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81; JD 6-1983, f. 9-23-83, ef. 9-26-83; JD 2-1986, f. & ef. 1-27-86; JD 7-1991, f. & cert. ef. 11-4-91

Ex Parte Communications to an Agency

137-03-062 [1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81; Repealed by JD 2-1986, f. & ef. 1-27-86]

Ex Parte Communications

137-03-063 [1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81, Repealed by JD 2-1986, f. & ef. 1-27-86]

Ex Parte Communication Record

137-03-064 [1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81; Repealed by JD 2-1986, f. & ef. 1-27-86]

Final Orders in Contested Cases

137-03-070 (1) Final orders on contested cases shall be in writing and shall include the following: (a) Rulings on admissibility of offered evidence when the rulings are not set forth in the record;

(b) Findings of fact — Those matters that are either agreed as fact or that, when disputed, are determined by the fact finder, on substantial evidence to be facts over contentions to the contrary. A finding must be made on each fact necessary to reach the conclusions of law on which the order is based.

(c) Conclusion(s) of law — Applications of the controlling law to the facts found and the legal

results arising therefrom;

(d) Order — The action taken by the agency as a result of the facts found and the legal conclusions arising therefrom;

(e) A citation of the statutes under which the order may be appealed.

(2) The date of service of the order to the parties shall be specified in writing and be part of or be attached to the order on file with the agency, <u>unless service of the final order is not required by statute</u>.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1) & 183.470

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 4-1979, f. & ef. 12-3-79; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 1-1988, f. & cert. ef. 3-3-88; JD7-1991, f. & cert. ef. 11-4-91

Final Default Orders by Default

137-03-075 (1) The agency may issue a final order by default:

(a) When the agency has given a party an opportunity to request a hearing and the party fails to make a request within a specified time and place for a hearing and the party fails to appear at the specified time and place, the agency may enter a final order by default.;

(b) When the party withdraws a request for a hearing;

(c) When the agency has scheduled a hearing and the party fails to appear at the specified time and place; or

(d) When the agency has scheduled a hearing in a matter in which only one party is before the agency and that party subsequently notifies the agency that the party will not appear at the specified time and place, unless the agency has agreed to reschedule the hearing.

(2) The agency may issue a <u>final</u> order of <u>by</u> default only after making a prima facie case on the record. The record <u>may shall</u> be made <u>at a scheduled hearing on the matter or, if the hearing is canceled or not held</u>, at an agency meeting at a scheduled hearing on the matter or, if the notice of intended action states that the order will be issued or become effective upon the failure of the party to timely request a hearing, when the order is issued. or at the time the final order by default is issued, unless the agency designates the agency file as the record at the time the contested case notice is issued in accordance with OAR 137-03-001(1).

(3) If the notice of intended action contains an order that is to become effective unless the party requests a hearing, the record shall be complete at the time of the notice of intended action.

(4)-The record may consist of oral (transcribed, recorded or reported) or written evidence or a combination of oral and written evidence. When the record is made at the time the notice or order is issued, the agency file may be designated as the record. In all cases, the record must contain substantial evidence to support the findings of fact that persuades the decision maker of the existence of facts necessary to support the order.

(4)(a) When a party requests a hearing after the time specified by the agency, but 70 days or less after the agency has entered a final order by default, the agency may grant the request only if the cause for failure to timely request the hearing was beyond the reasonable control of the party, unless other applicable law provides a different standard. The agency may require the request to be supported by an affidavit and may conduct such further inquiry, including holding a hearing, as it deems appropriate;

(b) If a final order by default has already been entered, the party requesting the hearing shall

deliver or mail within a reasonable time a copy of the hearing request to all persons and agencies required by statute, rule, or order to receive notice of the proceeding;

(c) If the hearing request is allowed by the agency, it shall enter an order granting the request and schedule a hearing in due course. If the request is denied, the agency shall enter an order setting forth its reasons for the denial.

(5) The agency shall notify a defaulting party of the entry of a final order by default by delivering or mailing a copy of the order. If the contested case notice contained an order that was to become effective unless the party requested a hearing, and designated the agency file as the record, that order becomes a final order by default if no hearing is requested, and no further order need be served upon the party.

(5) When the agency has set a specified time and place for a hearing in a matter in which only one party is before the agency and that party subsequently notifies the agency that the party will not appear at such specified time and place, the agency may enter a default order, cancel the hearing, and follow the procedure described in sections (2) and (4) of this rule.

(6) When a party requests a hearing after the time specified by the agency, but before the agency has entered a default order, the agency may grant the request or make further inquiry as to the existence of the reasons specified in subsection (7)(a) of this rule, for the request being tardy. If further inquiry is made, the agency may require an affidavit to be filed with the agency. The agency shall enter an order granting or denying the request as described in subsection (7)(e) of this rule.

(7)(a) When a party requests a hearing after entry of a default order, the party may request to be relieved from the default order only on grounds of mistake, inadvertence, surprise, or excusable neglect.

(b) The request shall be filed with the agency, and a copy delivered or mailed to all persons and agencies required by statute, rule, or order to receive notice of the proceeding, within a reasonable time. If the request is received more than 75 days after delivery or mailing of a copy of the order of default to the party or the party's attorney, it shall be presumed that such a request is not timely. This presumption may be rebutted by evidence showing that the request is reasonably timely.

(c) The request shall state why the party should be relieved from the default order.

(d) The agency may make further inquiry, including holding a hearing, as it deems appropriate.

(e) If the request is allowed by the agency, it shall enter an order granting the request and schedule a hearing in due course. If the request is denied, the agency shall enter an order setting forth its reasons for such denial.

(8) The agency shall notify a defaulting party of the entry of a default order by delivering or mailing a copy of the order as required by ORS 183.330(2).

Stat. Auth.: ORS 183.341, 183.390 &192.445 Stats. Implemented: ORS 183.341(1), 183.415(6) & 183.470 Hist.: JD 2-1986, f. & ef. 1-27-86; JD 7-1991, f. & cert. ef. 11-4-91; JD 6-1993, f. 11-1-93, cert. ef. 11-4-93

Reconsideration and Rehearing <u>— Contested Cases</u>

137-03-080 (1) A party may file a petition for reconsideration or rehearing of a final order in a contested case with the agency within 60 days after the order is served. A copy of the petition

shall also be delivered or mailed to all parties and other persons and agencies required by statute, rule, or order to receive notice of the proceeding.

(2) The petition shall set forth the specific grounds for reconsideration or rehearing. The petition may be supported by a written argument.

(3) A rehearing may be limited by the agency to specific matters.

(4) The petition may include a request for stay of a final order if the petition complies with the requirements of OAR 137-03-090(2) (f) through (i).

(5) The agency may consider a petition for reconsideration or rehearing as a request for either or both. The petition may be granted or denied by summary order and, if no action is taken, shall be deemed denied as provided in ORS 183.482.

(6) Any member of an agency's governing body may move for reconsideration or rehearing of an agency final order within 60 days after the order is served. Reconsideration or rehearing shall be granted if approved by the governing body. Within 60 days after the order is served, the agency may, on its own initiative, reconsider the final order or rehear the case. The procedural and substantive effect of reconsideration or rehearing on an agency's own motion under this section shall be identical to the effect of granting a party's petition for reconsideration or rehearing.

(7) Reconsideration or rehearing shall not be granted after the filing of a petition for judicial review, except in the manner provided by ORS 183.482(6).

(8) A final order remains in effect during reconsideration or rehearing until stayed or changed.

(9) At the conclusion of a reconsideration or rehearing, Following reconsideration or rehearing, the agency shall must enter a new order, which may be an order affirming the existing order.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1) & 183.482(1),(3)

Hist.: 1AG 14, f. & ef. 10-22-75; 1AG 17, f. & ef. 11-25-77; 1AG 1-1981, f. & ef. 11-17-81; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD 7-1991, f. & cert. ef. 11-4-91

Contested Cases — Stay Proceedings

Request for Stay Request

137-03-090 (1) Any person entitled to judicial review of an agency order who files a petition for judicial-review petitions for reconsideration, rehearing or judicial review may request the agency to stay the enforcement of the agency order that is the subject of the petition judicial review.

(2) The stay request shall contain:

(a) The name, address and telephone number of the person filing the request and of that person's attorney, if any The name of the person filing the request, identifying that person as a petitioner and the agency as the respondent;

(b) The full title of the agency decision as it appears on the order and the date of the agency decision;

(c) A summary of the agency decision; and

(d) The name, address, and telephone number of each <u>other party to the agency proceeding</u>. When the party was represented by an attorney in the proceeding, then the name, address, and telephone number of the attorney shall be provided and the address and telephone number of the party may be omitted; of the following:

(A) The petitioner;

(B) All other parties to the agency proceeding. When the party was represented by an attorney in the proceeding, then the name, address, and telephone number of the attorney shall be provided and the address and telephone number of the party may be omitted.

(e) A statement advising all persons whose names, addresses and telephone numbers are required to appear in the stay request as provided in subsection (2)(d) of this rule, that they may participate in the stay proceeding before the agency if they file a response in accordance with OAR 137-03-091 within ten days from delivery or mailing of the stay request to the agency;

(f) A statement of facts and reasons sufficient to show that the stay request should be granted because:

(A) The petitioner will suffer irreparable injury if the order is not stayed;

(B) There is a colorable claim of error in the order; and

(C) Granting the stay will not result in substantial public harm.

(g) A statement identifying any person, including the public, who may suffer injury if the stay is granted. If the purposes of the stay can be achieved with limitations or conditions that minimize or eliminate possible injury to other persons, petitioner shall propose such limitations or conditions. If the possibility of injury to other persons cannot be eliminated or minimized by appropriate limitation or conditions, petitioner shall propose an amount of bond, irrevocable letter of credit or other undertaking to be imposed on the petitioner should the stay be granted, explaining why that amount is reasonable in light of the identified potential injuries;

(h) A description of additional procedures, if any, the petitioner believes should be followed by the agency in determining the appropriateness of the stay request;

(i) In a request for a stay of an order in a contested case, aAn appendix of affidavits containing all evidence (other than evidence contained in the record of the contested case out of which the stay request arose) relied upon which the petitioner relies in support of the statements required under subsections (2)(f) and (g) of this rule. The record of the contested case out of which the stay request arose is a part of the record of the stay proceedings;

(j) In a request for stay of an order in other than a contested case, an appendix containing evidence relied upon in support of the statement required under subsections (2)(f) and (g) of this rule.

(3) The request must be delivered or mailed to the agency and on the same date a copy delivered or mailed to all parties identified in the request as required by subsection (2)(d) of this rule.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1) & 183.482(3)

Hist.: JD 6-1983, f. 9-23-83, ef. 9-26-83; JD 2-1986, f. & ef. 1-27-86; JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD 7-1991, f. & cert. ef. 11-4-91

Intervention in Stay Proceeding

137-03-091 (1) Any party identified under OAR 137-03-090(2)(d) desiring to participate as a party in the stay proceeding may file a response to the request for stay.

(2) The response shall contain:

(a) The full title of the agency decision as it appears on the order;

(b) The name, address, and telephone number of the person filing the response, except that if the

person is represented by an attorney, then the name, address, and telephone number of the attorney shall be included and the person's address and telephone number may be deleted;

(c) A statement accepting or denying each of the statements of facts and reasons provided pursuant to OAR 137-03-090(2)(f) in the petitioner's stay request;

(d) A statement accepting, rejecting, or proposing alternatives to the petitioner's statement on the bond, <u>irrevocable letter of credit</u> or undertaking amount or other reasonable conditions that should be imposed on petitioner should the stay request be granted.

(3) (d) The response may contain affidavits containing additional evidence upon which the party relies in support of the statement required under subsections (2)(c) and (d) of this rule.

(4) (3) The response must be delivered or mailed to the agency and to all parties identified in the stay request within ten days of the date of delivery or mailing to the agency of the stay request.

Stat. Auth.: ORS 183.341 & 183.390

Stats. Implemented: ORS 183.341(1) & 183.482(3)

Hist.: JD 6-1983, f. 9-23-83, ef. 9-26-83; JD 2-1986, f. & ef. 1-27-86; JD 7-1991, f. & cert. ef. 11-4-91

Stay Proceeding and Order

137-03-092 (1) The agency may allow the petitioner to amend or supplement the stay request to comply with OAR 137-03-090(2)(a) through (e) or (3). All amendments and supplements shall be delivered or mailed as provided in OAR 137-03-090(3), and the deadlines for response and agency action shall be computed from the date of delivery or mailing to the agency. The agency may conduct such further proceedings pertaining to the stay request as it deems desirable. The agency shall commence such proceedings promptly after receiving the stay request.

(2) After the deadline for filing of responses, the agency shall:

(a) Decide upon the basis of the material before it; or

(b) Conduct such further proceedings as it deems desirable; or

(c) Allow the petitioner within a time certain to submit responsive legal arguments and affidavits to rebut any response. Petitioner may not bring in new direct evidence through such affidavits. The agency may rely on evidence in such affidavits only if it rebuts intervenor evidence.

The agency shall issue an order granting or denying the stay request within 30 days after receiving it.

(3)—The agency's order shall:

(a) Grant the stay request upon findings of irreparable injury to the petitioner and a colorable claim of error in the agency order and may impose reasonable conditions, including but not limited to, a bond, <u>irrevocable letter of credit</u> or other undertaking and that the petitioner file all documents necessary to bring the matter to issue before the Court of Appeals within a specified reasonable period of time; or

(b) Deny the stay request upon a finding that the petitioner failed to show irreparable injury or a colorable claim of error in the agency order; or

(c) Deny the stay request upon a finding that a specified substantial public harm would result from granting the stay, notwithstanding the petitioner's showing or irreparable injury and a colorable claim of error in the agency order; or

(d) Grant or deny the stay request as otherwise required by law.

(4)(3) Nothing in OAR 137-03-055 or in 137-03-090 to 137-03-092 prevents an agency from

receiving evidence from agency staff concerning the stay request. Such evidence shall be presented by affidavit within the time limits imposed by OAR 137-03-091(4). If there are further proceedings pursuant to OAR 137-03-092(2)section (1) of this rule, the agency staff may present additional evidence in the same manner that parties are permitted to present additional evidence.

Stat. Auth.: ORS 183.341 & 183.390
Stats. Implemented: ORS 183.341(1) & 183.482(3)
Hist.: JD 6-1983, f. 9-23-83, ef. 9-26-83, JD 2-1986, f. & ef. 1-27-86; JD 1-1988, f. & cert. ef. 3-3-88; JD 7-1991, f. & cert. ef. 11-4-91

Request for Stay — Time Frames

137-03-093 [JD 2-1986, f. & ef. 1-27-86; Repealed by JD 7-1991, f. & cert. ef. 11-4-91]

DIVISION 4

MODEL RULES OF PROCEDURE APPLICABLE TO MISCELLANEOUS PROVISIONS

Existing Rules Repealed

137-04-000 All existing Model Rules heretofore adopted are repealed. Such repeal, however, does not affect nor impair any act done, right acquired, or duty imposed prior to the effective date of these rules.

Stat. Auth.: ORS Ch. 183 Stats. Implemented: ORS 183.341(1) Hist.: 1AG 14, f. & ef. 10-22-75

Unacceptable Conduct

137-04-010 A presiding officer may expel a person from an agency proceeding if that person engages in conduct that disrupts the proceeding.

Stat. Auth.: ORS Ch. 183 Stats. Implemented: ORS 183.341(1) Hist.: 1AG 1-1981, f. & ef. 11-17-81; JD 6-1983, f. 9-23-83, ef. 9-26-83; JD 2-1986, f. & ef. 1-27-86

Calculation of Time for Service

137-04-020 [1AG 1-1981, f. & ef. 11-17-81; Repealed by JD 2-1986, f. & ef. 1-27-86]

Reconsideration - Orders in Other Than Contested Case

137-04-080 (1) A person entitled to judicial review under ORS 183.484 of a final order in other than a contested may file a petition for reconsideration of a final order in other than a contested case with the agency within 60 days after the date of the order. A copy of the petition shall also be delivered or mailed to all other persons and agencies required by statute or rule to be notified. (2) The petition shall set forth the specific grounds for reconsideration. The petition may be

supported by a written argument.

(3) The petition may include a request for a stay of a final order if the petition complies with the requirements of OAR 137-03-090(2).

(4) The petition may be granted or denied by summary order, and, if no action is taken, shall be deemed denied as provided by ORS 183.484(2).

(5) Within 60 days after the date of the order, the agency may, on its own initiative, reconsider the final order. The procedural and substantive effect of granting reconsideration under this section shall be identical to the effect of granting a party's petition for reconsideration.

(6) Reconsideration shall not be granted after the filing of a petition for judicial review, unless permitted by the court.

(7) A final order remains in effect during reconsideration until stayed or changed.

(8) Following reconsideration, the agency shall enter a new order, which may be an order affirming the existing order.

Stat. Auth.: ORS 183.341, 183.390 & 192.445

Stats. Implemented: ORS

Hist.: JD 5-1989, f. 10-6-89, cert. ef. 10-15-89; JD7-1991, f. & cert. ef. 11-4-91; JD 6-1993, f. 11-1-93, cert. ef. 11-4-93

responsibility to his/her client or employer for the competent performance of the whole assignment.]

[(4)—Construction Requirements:

- -(a) Construction shall be in substantial conformance with approved plans and specifications and any terms of the permit issued by the Agent;
- (b) After completion of the system the professional shall certify that the system was installed in accordance with approved plans and specifications.]

Amend OAR 340-71-600 as follows:

340-71-600 SEWAGE DISPOSAL SERVICE

- No person shall perform sewage disposal services or advertise or represent (1)himself/herself as being in the business of performing such services without first obtaining a **business** license from the Department. Unless suspended or revoked at an earlier date, a Sewage Disposal Service business license issued pursuant to this rule expires on July 1 next following the date of issuance. Beginning *July 1-1996* January 1, 2000, in order to be licensed, the applicant for a license with an installer endorsement must provide evidence that at least one individual working for the business has passed a written examination to demonstrate [familiarization with] a minimally adequate knowledge of the on-site rules found in OAR Chapter 340, Divisions 71 and 73, or attend a Department approved training session covering the rules . In addition, the person at the job-site who supervises or is responsible for [All persons employed by the licensee who are involved in] the construction or installation of the system [systems] shall also pass the written test or attend the training session *fand shall-carry evidence of that on their person*]. The Department will provide all persons H who pass the test or attend the training session with a wallet size card for this purpose. People required to be certified shall be able to readily produce evidence of certification when asked to do so by the Agent. [Retesting will be] Re-certification is required every five (5) years, and may be accomplished by attending pertinent training sessions, workshops, or through other methods acceptable to the Department .
- (2) Two types of license endorsements may be issued:
 - (a) Installer. Businesses licensed with this endorsement may construct or install on-site systems or parts of on-site systems, and/or do the grading, excavating, and earth-moving work associated with the construction or installation of onsite systems;

- (b) Pumper. Businesses licensed with this endorsement may pump out and clean on-site sewage disposal systems, portable toilets, or any part thereof, and dispose of the material derived from the pumping out or cleaning of on-site systems and portable toilets.
- -<u>f(2)</u>] (3) Those persons making application for a sewage disposal service <u>business</u> license shall:
 - (a) Submit a complete license application form to the Department for each business; and
 - (b) File and maintain with the Department original evidence of surety bond, or other approved equivalent security, in the penal sum of two thousand five hundred dollars (\$2,500) for each business; and
 - (c) Shall have pumping equipment inspected by the Agent annually if intending to pump out or clean systems and shall complete the "Sewage Pumping Equipment Description/Inspection" form supplied by the Department. An inspection performed after January 1st shall be accepted for licensing the following July 1st; and
 - (d) Submit the appropriate fee as set forth in subsection 340-71-140(1)(h) for each business; and
 - (e) [Pass the written examination or have attended a Department approved training session] Except as provided in section (1) of this rule, furnish evidence that at least one individual working for the business has passed the written examination or attended a Department approved training session as described in section 1 of this rule; and
 - (f) If operating a septage pumping service, submit *[a copy of the past 12 months pumping records required by subsection (12)(d) of this rule]* <u>summary origin-destination pumping information on a form supplied by the Department.</u>
- [(3)] (4) A Sewage Disposal Service **business** license may be transferred or amended during the license period to reflect changes in business name, ownership, or entity (i.e., individual, partnership, or corporation), providing:
 - (a) A complete application to transfer or amend the license is submitted to the Department with the appropriate fee as set forth in OAR 340-71-140(1)(h); and
 - (b) The Department is provided with a rider to the surety, or a new form of security as required in subsection $(\underline{[2]}3)(b)$ of this rule; and
 - (c) A valid Sewage Disposal Service <u>business</u> license (not suspended, revoked, or expired) is returned to the Department; and

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- (d) If there is a change in the business name, a new ``Sewage Pumping Equipment Description/Inspection'' form for each vehicle is submitted to the Department ; and
- (e) No person who takes over a Sewage Disposal Service <u>business</u> shall operate the business until [they have] evidence is provided to the Department that at least one individual working for the business has passed the written examination or attended the Department approved training session as described in section (1) of this rule. Businesses that have only the pumper endorsement described in sub-section (2)(b) of this rule are exempt from this requirement.
- [(4)] (5) The type of security to be furnished pursuant to OAR 340-71-600([2] 3)(b) may be:
 - (a) Surety bond executed in favor of the State of Oregon on a form approved by the Attorney General and provided by the Department. The bond shall be issued by a surety company licensed by the Insurance Commissioner of Oregon. Any surety bond shall be so conditioned that it may be canceled only after forty-five (45) days notice to the Department, and to otherwise remain in effect for not less than two (2) years following termination of the sewage disposal service license, except as provided in subsection (e) of this section; or
 - (b) Insured savings account irrevocably assigned to the Department, with interest earned by such account made payable to the depositor; or
 - (c) Negotiable securities of a character approved by the State Treasurer, irrevocably assigned to the Department, with interest earned on deposited securities made payable to the depositor;
 - (d) Any deposit of cash or negotiable securities under ORS 454.705 shall remain in effect for not less than two (2) years following termination of the sewage disposal service license except as provided in subsection (e) of this section. A claim against such security deposits must be submitted in writing to the Department, together with an authenticated copy of:
 - (A) The court judgment or order requiring payment of the claim; or
 - (B) Written authority by the depositor for the Department to pay the claim.
 - (e) When proceedings under ORS 454.705 have been commenced while the security required is in effect, such security shall be held until final disposition of the proceedings is made. At that time claims will be referred for consideration of payment from the security so held.

- [(5)] (6) Each licensee shall:
 - (a) Be responsible for any violation of any statute, rule, or order of the Commission or Department pertaining to his licensed business;
 - (b) Be responsible for any act or omission of any servant, agent, employee, or representative of such licensee in violation of any statute, rule, or order pertaining to his license privileges;
 - (c) Deliver to each person for whom he performs services requiring such license, prior to completion of services, a written notice which contains:
 - (A) A list of rights of the recipient of such services which are contained in ORS 454.705(2); and
 - (B) Name and address of the surety company which has executed the bond required by ORS 454.705(1); or
 - (C) A statement that the licensee has deposited cash or negotiable securities for the benefit of the Department in compensating any person injured by failure of the licensee to comply with ORS 454.605 to 454.745 and with rules of the Environmental Quality Commission.
 - (d) Keep the Department informed on company changes that affect the license, such as business name change, change from individual to partnership, change from partnership to corporation, change in ownership, etc.
- [(6)] (7) Misuse of License:

- (a) No [*licensee*] <u>sewage disposal service business</u> shall [*permit*] <u>allow</u> anyone to <u>perform sewage disposal services</u> [*operate*] under <u>its</u> [*his*] license, except a person who is working [under supervision of the licensee] <u>as an employee of the</u> <u>business</u>;
- (b) No<u>business</u> [*person*] shall:
 - (A) Display or cause or permit to be displayed, or have in [his] its possession any license, knowing it to be fictitious, revoked, suspended or fraudulently altered;
 - (B) Fail or refuse to surrender to the Department any license which has been suspended or revoked;
 - (C) Give false or fictitious information or knowingly conceal a material fact or otherwise commit a fraud in any license application.

Environmental Quality Commission

- Rule Adoption Item
- Action Item
- Information Item

Title:

PROPOSED ADOPTION OF RULE AMENDMENTS TO THE ON-SITE SEWAGE DISPOSAL RULES

Summary:

This rulemaking package is intended to make three major changes to the on-site sewage disposal rules. In addition, 17 minor housekeeping changes are also proposed to be made. A summary follows:

1) Changes are proposed to the holding tank rules in 340-71-340. Temporary holding tanks have been in use for many years without any regulatory oversight. The Department proposes to regulate these alternative on-site sewage treatment and disposal systems without a permit as long as certain requirements are met.

2) The method for handling certain variance appeals in 340-71-340 would limit appeals heard by the Commission to those of variance approvals. Appeals of denials would go to the Circuit Court of the county in which the appeal arose.

3) The certification requirement in 340-71-600 requires every person seeking an on-site sewage disposal business license and each employee engaged in the installation of on-site systems to pass a certification test on the on-site program rules. This proposal exempts pumpers and limits the certification requirement to applicants and persons who supervise or are responsible for the installation of the system. Further, it extends the compliance deadline to January 1, 2000.

Every rule amendment proposed was reviewed by the Technical Advisory Committee. One public hearing was held and no one testified. Five comment letters were received, and changes made in response to the public comment are included in the report.

Department Recommendation:

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The Department recommends that the Commission adopt the rule amendments as presented in Attachment A of this report.

Director Myc Co Taylor Division Administrator

Agenda Item E.1.

June 5, 1997 Meeting

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:	June 5, 1997
То:	Environmental Quality Commission
From:	Langdon Marsh, Director
Subject:	Agenda Item E.1., EQC Meeting, June 5, 1997 Proposed Adoption of On-site Sewage Disposal Rule Amendments

Background

The Department of Environmental Quality (Department) regulates on-site sewage treatment and disposal activities throughout Oregon, and delivers field services to the public in 14 counties (4 in western Oregon, 10 in eastern Oregon). In the other 22 counties, on-site field services are delivered to the public by local government staff through a contractual arrangement. About 35 percent of Oregon's citizens depend on septic systems to treat and dispose of domestic wastes. Program rules are intended to protect the public from contact with pathogens such as bacteria, viruses and parasites which might be present in wastewater. They are also intended to protect both ground water and surface water from contamination by the micro-organisms and nitrate present in sewage.

On March 13, 1997, the Director authorized the Water Quality Division to proceed to a rulemaking hearing on proposed rules which would amend portions of the on-site sewage disposal program. Four substantive rule changes were proposed along with 17 housekeeping changes to Divisions 71 and 73 of Chapter 340 of Oregon Administrative Rules.

Pursuant to the authorization, hearing notice was published in the Secretary of State's <u>Bulletin</u> on April 1, 1997. The Hearing Notice and informational materials were mailed to the mailing list of those people who have asked to be notified of rulemaking actions, and to a mailing list of people known by the Department to be potentially affected by, or interested in, the proposed rulemaking action on March 21, 1997.

One Public Hearing was held Tuesday, April 22, 1997, at the DEQ, Northwest Region Office, 2020 SW Fourth Avenue, #400, Portland, OR. Martin Loring served as Presiding Officer. Written comment was received through April 25, 1997, with the comment period closing at 5 pm that day. The Presiding Officer's Report (Attachment C) summarizes the oral testimony presented at the hearing and lists all the written comments received. (A copy of the comments is available upon request.)

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

Department staff evaluated the comments received (Attachment D). Based upon that evaluation, modifications to the initial rulemaking proposal are being recommended by the Department. These modifications are summarized below. Because of the small volume of comments, details on the comments are included in Attachment D instead of being broken out in a separate attachment.

The following sections summarize the issues that this proposed rulemaking action is intended to address, the authority to address the issues, the process for development of the rulemaking proposal including alternatives considered, a summary of the rulemaking proposal presented for public hearing, a summary of the significant public comments, the changes proposed in response to those comments, a summary of how the rule will work and a description of how it is proposed to be implemented. A recommendation for Commission action is also included.

Issue this Proposed Rulemaking Action is Intended to Address

Five major issues and 17 minor issues were considered by staff and the On-site Rules Technical Advisory Committee in developing this rulemaking proposal. This proposal addresses three of the major issues and all 17 of the minor (housekeeping) issues. The major issues this rulemaking is intended to address are as follows:

- 1. Regulation of Portable Holding Tanks OAR 340-71-340 deals with the use of holding tanks as an alternative on-site sewage disposal system. Three types are in use, as follows:
 - a. Permanent Holding Tanks Businesses with small flows and no conventional alternatives may use a holding tank for domestic waste disposal under a Water Pollution Control Facilities (WPCF) operating permit. Either an individual WPCF permit or WPCF general permit number 5400 may be used. Most are regulated by the general permit.
 - b. **Temporary Holding Tanks** A holding tank permit may be issued when a community sewer system is expected to become available within five years. In such circumstances, the Department may issue an individual WPCF operating permit provided there is a local commitment to provide a sewer connection within five years.
 - c. **Portable Holding Tanks** The federal Occupational Safety and Health Agency (OSHA) mandates that flush toilets and hand washing facilities be made available to workers at the site of construction projects over a certain dollar size. The portable sanitation industry has met this need through the use of temporary, portable holding tanks which they place and service. This type of service may also be provided at festivals and other short duration events like the State Fair.

Committee discussion was limited to portable holding tanks. A close reading of existing rule supports a conclusion that each of the 1,000 portable holding tanks estimated to be in use around the state is required to be regulated by permit. These tanks were in use for some period of time before the Department became aware of their existence, and no permit requirement or other formal regulatory mechanism has ever been enforced. The committee spent considerable time discussing the following two issues with respect to portable holding tanks: 1) should these facilities should be regulated? and 2) If they are subject to regulation, how should it be accomplished?

- 2. Appeals from Decisions of On-site Variance Officers Administrative procedures for appeals of decisions are set out in rule. The current rule (OAR 340-71-440) provides that decisions of variance officers to approve or deny a variance request may be appealed to the Environmental Quality Commission. The issue addressed by this rule proposal is whether appeals of variance denials should be heard by the Commission as a matter of law.
- 3. Certification One of the protections provided in the on-site rules is a requirement that each of Oregon's approximately 1300 on-site sewage disposal service businesses must be licensed annually by the Department. In 1994, licensing requirements were strengthened to require that people seeking on-site sewage disposal service business licenses, and each employee engaged in the installation of systems, must be certified as having a certain minimum level of knowledge about the on-site program rules. This rule (OAR 340-71-600) affected an estimated 4,000 people who were faced with a July 1, 1996 certification deadline to demonstrate this knowledge by taking and passing a written test.

As the original compliance deadline neared, it was obvious that a significant number of people would not be able to comply, many through no fault of their own. To avert a crisis that would result from taking away the livelihood of hundreds of people, a temporary rule was adopted to move the deadline back to January 1, 1997. This delay was the longest available through a temporary rule, and was intended to allow time for the Department to seek fee authority and resources to properly carry out the certification mandate. Unfortunately, this request did not make it into the Governor's Recommended Budget, and the Department has been unble to offer the test often enough or widely enough to attain significant compliance.

That is, of the 4,000 people subject to the original rule requirement., we have been able to test and certify about 800 people (600 since the temporary rule was approved), or 20% of those subject to the requirement. In spite of our best efforts, we face another licensing deadline July 1, 1997, far short of where we need to be to implement this requirement without causing significant economic disruption. The following three certification issues are addressed by this rule proposal:

- a. Should there be an on-site certification program?
- b. Who should be subject to on-site program certification requirements, and

- c. When should on-site program certification requirements take effect?
- 4. Minor Housekeeping Issues Issues represented by the 17 minor housekeeping changes to the rules involve three definitions in need of updating, language in conflict with statute that needs to be deleted, eliminating two rule effective dates that have passed, reducing fees set in rule to conform to a legislatively mandated fee roll back, and adding or deleting language where needed to clarify the intent of a rule.

Two more major rule issues were considered by staff and the On-site Rules Technical Advisory Committee, without resulting in a rule recommendation for consideration by the Commission at this time. The first went out as part of the public notice, and the second did not, as follows:

- Disposal Trenches for Sand Filter Effluent Standard trenches for disposal of sand filter effluent require media 12 inches deep in a 24 inch wide trench. Current rule language in OAR 340-71-290 is ambiguous with respect to whether or not these trenches may be sited in areas where temporary groundwater is expected to rise above the trench bottom for short periods of time. After extensive discussion, the On-site Rules Technical Advisory Committee recommended that the rules be amended to make it clear that temporary groundwater may be allowed to inundate the bottom six inches of a trench used for disposal of sand filter effluent.
- 2. Conditions Associated with Saturation This issue has to do with what observations field staff may rely on to indicate the probability that water is present in the soil profile for a long enough time to interfere with the proper functioning of an on-site sewage disposal system. It also involves an updating of technical language used to describe the appearance of soil after it has been exposed to water for a long period of time. Existing rule language is found at OAR 340-71-100(28). Because of the complex issues involved, consensus was not reached on how these issues should be resolved. As such, no recommendation was included in the rule proposal taken to hearing, and the issue will go back to a Technical Advisory Committee for additional work.

Relationship to Federal and Adjacent State Rules

The on-site program is a state program. There is no direct relationship to federal requirements. An indirect relationship exists in terms of the Coastal Zone Management Act, the Safe Drinking Water Act, and the Underground Injection Control (UIC) rules written to implement portions of the Clean Water Act. Coastal zone officials are concerned that the state develop an adequate system of monitoring and control of existing on-site systems to avoid contamination of shell fish producing areas of estuaries by area wide failure of systems. Drinking water officials are concerned that the density and condition of systems may pollute groundwater needed for drinking water supplies with nitrates, bacteria and viruses. UIC concerns are similar and the UIC rules apply to on-site systems designed to serve more than 20 people. In Oregon, this have been interpreted to affect systems

which discharge more than 5,000 gallons a day. There are also adjacent state rules that concern themselves with the need to protect groundwater.

Authority to Address the Issue

ORS 454.625 mandates that the Commission adopt such rules as it considers necessary for the purpose of regulating subsurface sewage disposal consistent with the direction given in ORS 454.605 through 454.745.

<u>Process for Development of the Rulemaking Proposal (including Advisory Committee and alternatives considered)</u>

There were no documents relied upon for the development of these rules other than material prepared by staff. A list of rule issues for discussion was requested from DEQ and County field office staff. This was supplemented with input from headquarters staff, committee members, consultants and other interested parties. A Technical Advisory Committee was used to develop the proposed rule amendments. The committee consisted of 12 members broadly representing all aspects of the on-site industry. Participation came from septic tank installers, manufacturers, pumpers, portable sanitation providers, consulting engineers, soil scientists, developers, consulting sanitarians, county on-site staff, and a college professor. Six technical advisory committee meetings were held, and the committee worked by consensus. That is, if a position on a given issue could not be reached that everyone at least accepted in the time available, no recommendation was forwarded.

Summary of Rulemaking Proposal Presented for Public Hearing and Discussion of Significant Issues Involved.

- 1. Disposal Trenches for Sand Filter Effluent After extensive discussion, the On-site Rules Technical Advisory Committee recommended that ambiguous language in OAR 340-71-290 be rewritten to make it clear that disposal trenches for the disposal of sand filter effluent may be sited where groundwater is likely to rise temporarily to fill the bottom six inches (i.e. half) of the disposal trench media. This is what was included in the proposal presented for public hearing.
- 2. Regulation of Portable Holding Tanks The issues presented to the On-site Rules Technical Advisory Committee were resolved as follows:
 - a) As a matter of law, portable holding tanks need to be regulated by the Department as alternative on-site sewage disposal systems, and

- b) For logistical reasons, and because portable holding tanks have been in use (unregulated) for some time, it is desirable to avoid issuance of a permit for this type of facility. Regulation should instead be like that used for portable sanitation facilities. This approach relies on the licensing and oversight of on-site sewage disposal service businesses that own and place such facilities to ensure that they follow the standards set out in rule.
- 3. Appeals from Decisions of On-site Variance Officers Administrative procedures for appeals of decisions are set by rule. The current rule (OAR 340-71-440) provides that decisions of variance officers to approve or deny a variance request may be appealed to the Environmental Quality Commission. The rule proposal taken to hearing would limit appeals heard by the Commission to those of variance approvals. Appeals of variance denials would be to the Circuit Court of the county in which the appeal arose.

The issue does not involve a substantive consideration of "what is the best procedure for handling variance appeals", but rather is limited to a much narrower discussion of "what is prescribed by statute and legislative intent". The statutory language of ORS 454.660 says, "Decisions of variance officers to grant variances may be appealed to the Environmental Quality Commission". The Department of Justice was asked to investigate and advise as to the legislative intent of that language. After reviewing the legislative record and listening to tapes of the subcommittee hearing at which it was passed, Justice advised the Department that the Legislature clearly intended only appeals of variance approvals to be heard by the Commission. This is the basis for the rule recommendation forwarded by the Committee and staff.

- 4. Certification -The certification rule presented for public hearing is in OAR 340-71-600. In terms of the three certification issues considered by the On-site Rules Technical Advisory Committee, the proposal resolves each as follows:
 - a) An on-site certification program should be retained as an important quality assurance tool,
 - b) Certification requirements should apply to septic tank installers and their employees who supervise or are responsible for installing systems, but they should not apply to nonsupervisory employees of septic tank installers, or to septic tank pumpers, portable sanitation providers or to the employees of septic tank pumpers and portable sanitation providers.
 - c) Certification requirements should take effect January 1, 2000.

Since the temporary rule has expired, the original rule is back in effect. It requires every person seeking an on-site sewage disposal service business license, and each employee engaged in the installation of on-site systems, to be certified as having a certain minimum level of knowledge about the on-site program rules. This rule affects an estimated 4,000 people, of whom only

about 800 or 20% have complied to date. The Department lacks the staffing and other resources needed to properly implement a certification program by the deadline, and no fee has been authorized to pay for the program.

Another July 1st licensing deadline approaches, and the Department has only been able to certify a fraction of those subject to the requirement. Imposing the certification requirement now will still cause a major disruption of the on-site septic service industry which does not seem to be balanced by any tangible environmental or public health benefit. The Committee also concluded that the Department needs staff and other resources to implement a certification program as well as a fee to pay for it. Since neither need could be met through this rulemaking proposal, the Committee agreed to extend the compliance deadline to January 1, 2000 to allow time for the Department to put the request for resources in one more budget request.

The 17 minor, housekeeping issues presented for public hearing in this rulemaking proposal included the following:

- 1. OAR 340-71-100(88): Definition of "medium sand" was deleted, with portions added to the definition of "sand filter media", which required all of the following definitions to be renumbered.
- 2. OAR 340-71-100(115): Clarify the definition of "residential strength wastewater".
- 3. OAR 340-71-100(116): Language from 100(88) and 295(3) was incorporated into the definition of "sand filter media".
- 4. OAR 340-71-120: Delete language allowing counties delivering on-site field services under a contract with the Department to adopt requirements by ordinance to cure a conflict with statute.
- 5. OAR 340-71-130: Add language to operating permit requirements for Water Pollution Control Facilities (WPCF) permits that groups systems together on a single parcel of land for the purpose of determining whether design flows indicate that a WPCF or construction-installation permit is warranted.
- 6. OAR 340-71-140: Reduce all on-site fees established by rule to reflect the 30% rollback mandated by the 1995 Legislative Assembly.
- 7. OAR 340-71-162: Add "community systems" to the list of rules which do not apply to WPCF applicants or permittees.
- 8. OAR 340-71-205: Clarify language that an authorization notice is required to re-connect to an existing on-site sewage disposal system.

- 9. OAR 340-71-220: Include additional language for dosing tanks regarding cover design and nominal diameter of the riser.
- 10. OAR 340-71-295: Remove language regarding the number of orifices required in a sand filter based on six square feed of sand surface area. Add language allowing the use of a threaded cap or plug as an option to the use of a valve at the end of each lateral.
- 11. OAR 340-71-315: Add language requiring field collection tile trench to be a minimum of 12 inches wide to enable it to meet slope requirements.
- 12. OAR 340-71-425: Add language increasing the number of years of experience a person must have to qualify for appointment as a variance officer.
- 13. OAR 340-71-500: Remove language that duplicates material already covered in OAR 340-71-162.
- 14. OAR 340-71-520: Remove language regarding construction requirements and technical experience requirements to prepare plans and specifications. Add language indicating who may provide a written assessment of large systems.
- 15. OAR 340-71-605: Remove implementation date of rule modifications already in effect.
- 16. OAR 340-73-055: Add language allowing flexibility in determining what design methods may be used to protect pumps from suspended solids. Language is also added to clarify that only dosing tanks are subject to the on-third storage volume requirement. Language is removed that prevents the use of a screen if the dosing assembly is preceded by a tank with an effluent filter.
- 17. OAR 340-73-090: Remove language specifying the effective date of rule amendments already in effect.

Summary of Significant Public Comment and Changes Proposed in Response

No testimony was received at the April 22, 1997 public hearing, but five written comments were received by the 5:00 p.m., April 25, 1997 deadline. A summary of each comment received and any changes proposed by the Department in response to the comments follows:

1. Disposal Trenches for Sand Filter Effluent - The Oregon Water Resources Department and the Jefferson County Department of Environmental health commented that the proposal to allow temporary groundwater to rise into the bottom six inches of a disposal trench following a sand filter system is a bad idea from a technical and legal standpoint. Their technical argument is that scientific studies show that under conditions of saturated flow (i.e. water level above the bottom

of a disposal trench) pathogens may be quickly flushed a long way through soil along the hydraulic gradient. The legal argument relates to imperatives of the Groundwater Protection Act and other state laws valuing all ground water, whether temporary or permanent, and requiring that all aquifers be protected from the type of pollution found in a disposal trench. Given the controversy, the Department has decided to withdraw the proposed new rule language and refer the issue back to the On-site Rule Technical Advisory Committee for additional work.

- 2. Portable Holding Tanks A facsimile transmission was received over the signatures of six members of the portable sanitation industry. They argued that portable holding tanks should be exempt from regulation by the Department. No change is proposed in response to this suggestion because the Department believes that regulation is required by statute, and that the method of regulation proposed in the draft rule is the least intrusive means available that is protective of public health and waters of the state.
- 3. Appeals from Decisions of Variance Officers One comment letter was received as part of the public record taking issue with the rule revision proposed to OAR 340-71-440. It was argued that the Commission should continue to hear appeals of denied variances because it is the fairest and best way to deal with them. A further argument was that requiring appeals to go to circuit court is inequitable and too expensive. No changes have been made in the rule proposal as a result of this comment because it is not responsive to the issue under consideration. The issue under consideration is whether or not the current rule conforms to statute and carries out legislative intent. Since we have been advised by Counsel that it does not, the Department has no choice but to recommend that the Commission approve the proposed rule language limiting variance appeals heard by the Commission to appeals of variance approvals.
- 4. Certification One written comment was received from Clackamas County to the effect that the Department has had plenty of time to implement a certification program for installers, and that we should not delay this important requirement any longer. No change has been proposed in response to this comment. While it is true that the Department has had 18 months to implement this requirement, we have not been able to complete the task in the time available because of the absence of any new resources to apply to the task and our inability to relieve staff from enough existing responsibilities to get the job done. Further, whether or not the Department should have been able to implement a certification program by now, we have not, and it would not be fair or in the public interest to cause the cost of that failure to fall on the many small businesses which have not been afforded a reasonable opportunity to comply with the certification requirements.
- 5. Other Comments Several significant comments were made about areas of the on-site program rules that were not discussed by the On-site Rules Technical Advisory Committee or covered by the public notice and fiscal impact statement. Upon advice of counsel, no changes have been proposed in this permanent rule package with respect to items not covered in the public notice and fiscal impact statement. However, the less urgent issues raised will be added to the list of unresolved on-site issues that the Department will ask the On-site Rules Technical Advisory

Committee to consider when it next resumes meeting. One more urgent issue was raised by the Josephine County Board of Commissioners.

The Commissioners suggested that instead of inspecting permanent holding tanks and charging each permittee an annual compliance determination fee to cover the cost, the Department should maintain a register of these tanks and approve local vendors to conduct these inspections. In response to this suggestion, the Department has decided to proceed with a simultaneous, but separate temporary rulemaking to defer billing for 180 days of the \$200 annual compliance determination fee scheduled to be invoiced to each of the 130 facilities operating holding tanks under WPCF operating permits. During the time this proposed temporary rule would be in effect, an On-site Rules Technical Advisory Committee will be asked to take into consideration the Commissioners' comment in an overall evaluation of ways to improve the efficiency and effectiveness of holding tank regulation.

6. Minor Housekeeping Items - No oral or written comments have been received on any of the 17 minor housekeeping items. As such, the rule proposal with respect to these items is the same as that taken to public hearing.

Summary of How the Proposed Rule Will Work and How it Will be Implemented

Upon adoption by the Commission and filing with the Secretary of State, the amended rules will be in effect. The initial implementation step will be to re-license qualified on-site sewage treatment and disposal service businesses without requiring them or their employees to prove that they have been certified. All rule changes will be communicated to DEQ field offices and Contract Agent offices by memorandum.

Recommendation for Commission Action

It is recommended that the Commission adopt the rule amendments regarding the on-site sewage treatment and disposal program as presented in Attachment A of the Department Staff Report.

Attachments

- A. Rule (Amendments) Proposed for Adoption
- B. Supporting Procedural Documentation:
 - 1. Legal Notice of Hearing
 - 2. Fiscal and Economic Impact Statement
 - 3. Land Use Evaluation Statement
 - 4. Questions to be Answered to Reveal Potential Justification for Differing from Federal Requirements

Phone:

- 5. Cover Memorandum from Public Notice
- C. Presiding Officer's Report on Public Hearing
- D. Department's Evaluation of Public Comment
- E. None included.
- F. Advisory Committee Membership and Report
- G. Rule Implementation Plan
- H. (Other Attachments as appropriate)

Reference Documents (available upon request)

Written Comments Received (listed in Attachment C)

Approved:

Section:

Report Prepared By: Dewey Darold, R.S.

(503) 229-5189

Date Prepared: May 2, 1997

Division:

Agenda Item E.1., June 5, 1997 EQC Meeting F:\TEMPLATE\FORMS\EQCRULE.DOT

Iote:The <u>underlined</u> portion of text represent proposed additions to the rule.The [bracketed] portion of text represents proposed deletions to the rule.

Amend OAR 340-71-100 as follows:

340-71-100 DEFINITIONS.

As used in OAR 340, Divisions 71, 72, and 73, unless otherwise specified:

- (1) "Absorption Facility" means a system of open-jointed or perforated piping, alternative distribution units, or other seepage systems for receiving the flow from septic tanks or other treatment facilities and designed to distribute effluent for oxidation and absorption by the soil within the zone of aeration.
- (2) "Active Sand Dune" means wind drifted ridges and intervening valleys, pockets, and swales of sand adjacent to the beach. The sand is grayish-brown (color value of four (4) or more), with little or no horizon, color, or textured differences. Active dunes are either bare of vegetation or lack sufficient vegetation to prevent blowing of sand.
- (3) "Aerobic Sewage Treatment Facility" means a sewage treatment plant which incorporates a means of introducing air and oxygen into the sewage so as to provide aerobic biochemical stabilization during a detention period. Aerobic sewage treatment facilities may include anaerobic processes as part of the treatment system. Mechanical Oxidation Sewage Treatment Facility means an aerobic treatment facility.
- (4) "Aerobic System" means an alternative system consisting of a septic tank or other treatment facility, an aerobic sewage treatment facility and an absorption facility, designed to provide a level of treatment before disposal.
- (5) "Agent" means the Director or that person's authorized representative.
- (6) "Alteration" means expansion and/or change in location of an existing system, or any part thereof.
- (7) "Alternative System" means any Commission approved on-site sewage disposal system identified within this division, for use in lieu of the standard subsurface system.
- (8) **"Approved Material"** means construction items that have been reviewed and accepted for use by the Department.

- (9) "Approved Criteria" means methods of design or construction that have been reviewed by the Technical Review Committee (TRC) and accepted for use by the Department.
- (10) "ASTM" means American Society of Testing Materials.
- (11) **"Authorization Notice"** means a written document issued by the Agent which establishes that an existing on-site sewage disposal system appears adequate to serve the purpose for which a particular application is made.
- (12) **"Authorized Representative"** means the staff of the Department of Environmental Quality or staff of the local governmental unit performing duties for and under agreement with the Department of Environmental Quality.
- (13) **"Automatic Siphon"** means a hydraulic device designed to rapidly discharge the contents of a dosing tank between predetermined water or sewage levels.
- (14) **"Bedroom"** means any room within a dwelling which is accepted as such by the State of Oregon Department of Commerce building codes representative or the local authorized building official having jurisdiction.
- (15) "Biochemical Oxygen Demand (BOD)" means a measure of the decomposable organic matter in wastewater. It is used as an indication of wastewater strength. For the purpose of these rules, all references to BOD shall be for the five day BOD.
- (16) **"Black Waste"** means human body wastes including feces, urine, other extraneous substances of body origin and toilet paper.
- (17) **"Capping Fill System"** means an alternative system where the disposal trench effective sidewall is installed a minimum of twelve (12) inches into the natural soil below a soil cap of specified depth and texture.
- (18) **"Cesspool"** means a lined pit which receives raw sewage, allows separation of solids and liquids, retains the solids and allows liquids to seep into the surrounding soil through perforations in the lining.
- (19) **"Chemical Recirculating Toilet Facility"** means a toilet facility wherein black wastes are deposited and carried from the bowl by a combination of liquid waste and water which has been chemically treated and filtered.
- (20) **"Chemical Toilet Facility"** means a non-flushing, non-recirculating toilet facility wherein black wastes are deposited directly into a chamber containing a solution of water and chemical.

- (21) "Clayey Soil" means mineral soil that is over forty (40) percent clay that shrinks and develops wide cracks when dry and swells and shears when wet forming slickensides and wedge-shaped structure. Clayey soil is very hard or extremely hard when dry, very firm when moist, and very sticky and very plastic when wet.
- (22) "Claypan" means a dense, compact clay layer in the subsoil. It has a much higher clay content than the overlying soil horizon from which it is separated by an abrupt boundary. Claypans are hard when dry and very sticky and very plastic when wet. They impede movement of water and air and growth of plant roots.
- (23) **"Combustion Toilet Facility"** means a toilet facility wherein black wastes are deposited directly into a combination chamber for incineration.
- (24) **"Commercial Facility"** means any structure or building, or any portion thereof, other than a single-family dwelling.
- (25) "Commission" means the Environmental Quality Commission.
- (26) "Community System" means an on-site system which will serve more than one (1) lot or parcel or more than one (1) condominium unit or more than one (1) unit of a planned unit development.
- (27) **"Completed Application"** means one in which the application form is completed in full, is signed by the owner or that person's authorized representative, and is accompanied by all required exhibits and required fee.
- (28) "Conditions Associated With Saturation" means:
 - (a) Reddish brown or brown soil horizons with gray (chromas of two (2) or less) and red or yellowish red mottles; or
 - (b) Gray soil horizons, or gray soil horizons with red, yellowish red, or brown mottles; or
 - (c) Dark colored highly organic soil horizons; or
 - (d) Soil profiles with concentrations of soluble salt at or near the ground surface.
- (29) **"Confining Layer"** means a layer associated with an aquifer that because of its low permeability does not allow water to move through it perceptibly under head differences occurring in the groundwater system.
- (30) **"Construction"** includes installation of a new system or part thereof, or the alteration, repair or extension of an existing system. The grading, excavating, and earth-

moving work connected with installation, alteration, or repair of a system, or part thereof, is considered a part of system construction.

- (31) "Conventional Sand Filter" means a filter with two (2) feet or more of *[medium]* sand <u>filter media</u> designed to chemically and biologically process septic tank or other treatment unit effluent from a pressure distribution system operated on an intermittent basis.
- (32) "Curtain Drain" means a groundwater interceptor that is installed as a trench with a minimum width of twelve (12) inches and extending into the layer that limits effective soil depth. It has a perforated pipe installed along the bottom of, and the length of the trench and has a minimum of twelve (12) inches of drain media over the drainline and filter fabric placed over the drain media. The curtain drain must meet the setbacks from septic tanks and disposal areas as required in Table 1.
- (33) "Cut-Manmade" means a land surface resulting from mechanical land shaping operations where the modified slope is greater than fifty (50) percent, and the depth of cut exceeds thirty (30) inches.
- (34) "Department" means the Department of Environmental Quality.
- (35) **"Design Criteria"** means the criteria used in designing on-site sewage disposal systems including, but not necessarily limited to, dimensions, geometry, type of materials, size of drain media or filter media, disposal field sizing, depth, grade or slope, hydraulic loading rate or any other factor relevant to the successful operation of the system. It does not include disposal area siting criteria.
- (36) "Director" means the Director of the Department of Environmental Quality.
- (37) "Disposal Area" means the entire area used for underground dispersion of the liquid portion of sewage including the area designated for the future replacement system. It may consist of a seepage pit or of a disposal field or of a combination of the two. It may also consist of a cesspool, seepage bed, bottomless sand filter, or evapotranspiration-absorption system.
- (38) **"Disposal Field"** means a system of disposal trenches or a seepage trench or system of seepage trenches.
- (39) "Disposal Trench" means a ditch or a trench installed into natural soil, permeable saprolite or diggable bedrock, with vertical sides and substantially flat bottom with a minimum of twelve (12) inches of clean, coarse drain media or other material that is used in these rules into which a single distribution pipe has been laid, the trench then being backfilled with a minimum of six (6) inches of soil.

- (40) **"Distribution Box"** means a watertight structure which receives septic tank or other treatment facility effluent and distributes it concurrently into two (2) or more header pipes leading to the disposal area. (See OAR 340-73-035).
- (41) **"Distribution Pipe"** means an open-jointed or perforated pipe used in the dispersion of septic tank or other treatment facility effluent into disposal trenches, seepage trenches, or seepage beds.
- (42) **"Distribution Unit"** means a distribution box, dosing tank, diversion value or box, header pipe, or other means of transmitting septic tank or other treatment unit effluent from the effluent sewer to the distribution pipes.
- (43) **"Diversion Valve"** means a watertight structure which receives septic tank or other treatment facility effluent through one (1) inlet, distributes it to two (2) outlets, only one (1) of which is utilized at a given time (See OAR 340-73-045).
- (44) **"Dosing Tank"** means a watertight receptacle placed after a septic tank or other treatment facility equipped with an automatic siphon or pump.
- (45) **"Dosing Septic Tank"** means a unitized device performing functions of both a septic tank and a dosing tank.
- (46) "Drainfield" means a Disposal Field.
- (47) "Drain Media" means clean washed gravel, clean crushed rock, or other media approved by the Director's Designee, for the purpose of distributing effluent. When gravel or crushed rock is used it shall have a minimum size of three quarters (3/4) inches and a maximum size of two and one-half (2-1/2) inches. The material shall be durable and inert so that it will maintain its integrity and not collapse or disintegrate with time and shall not be detrimental to the performance of the system.
- (48) "Dwelling" means any structure or building, or any portion thereof which is used, intended, or designed to be occupied for human living purposes including, but not limited to: houses, houseboats, boathouses, mobile homes, travel trailers, hotels, motels, and apartments.
- (49) "Effective Seepage Area" means the sidewall area within a disposal trench or a seepage trench from the bottom of the trench to a level two (2) inches above the distribution pipes, or the sidewall area of any cesspool, seepage pit, unsealed earth pit privy, or gray water waste disposal sump seepage chamber; or the bottom area of a pressurized soil absorption facility installed in soil as defined in section (139) this rule.

- (50) **"Effective Soil Depth"** means the depth of soil material above a layer that impedes movement of water, air, and growth of plant roots. Layers that differ from overlying soil material enough to limit effective soil depth are hardpans, claypans, fragipans, compacted soil, bedrock, saprolite, and clayey soil.
- (51) **"Effluent Filter"** means an effluent treatment device installed on the outlet of a septic tank which is designed to prevent the passage of suspended matter larger than one-eighth inch in size.
- (52) **"Effluent Lift Pump"** means a pump used to lift septic tank or other treatment facility effluent to a higher elevation. (See OAR 340-73-055).
- (53) **"Effluent Sewer"** means that part of the system of drainage piping that conveys partially treated sewage from a septic tank or other treatment facility into a distribution unit or an absorption facility. (See OAR 340-73-060).
- (54) **"Emergency Repair"** means repair of a failing system where immediate action is necessary to relieve a situation in which sewage is backing up into a dwelling or building, or repair of a broken pressure sewer pipe. It does not include the construction of new or additional absorption facilities, but would allow use of the septic tank as a temporary holding tank until such time as new or additional absorption facilities could be constructed pursuant to an issued permit.
- (55) **"Equal Distribution"** means the distribution of effluent to a set of disposal trenches in which each trench receives effluent in equivalent or proportional volumes.
- (56) "Escarpment" means any naturally occurring slope greater than fifty (50) percent which extends vertically six (6) feet or more as measured from toe to top, and which is characterized by a long cliff or steep slope which separates two (2) or more comparatively level or gently sloping surfaces, and may intercept one (1) or more layers that limit effective soil depth.
- (57) **"Evapotranspiration-Absorption (ETA) System"** means an alternative system consisting of a septic tank or other treatment facility, effluent sewer and a disposal bed or disposal trenches, designed to distribute effluent for evaporation, transpiration by plants, and by absorption into the underlying soil.
- (58) **"Existing On-Site Sewage Disposal System"** means any installed on-site sewage disposal system constructed in conformance with the rules, laws and local ordinances in effect at the time of construction, or which would have conformed substantially with system design provided for in Commission, State Board of Health or State Health Division rules.
- (59) "Existing System" means "Existing On-Site Sewage Disposal System."

- (60) **"Failing System"** means any system which discharges untreated or incompletely treated sewage or septic tank effluent directly or indirectly onto the ground surface or into public waters.
- (61) **"Family Member"** means any one (1) of two (2) or more persons related by blood or legally.
- (62) **"Filter Fabric"** means a woven or spun-bonded sheet material used to impede or prevent the movement of sand, silt and clay into drain media. A specification for filter fabric is found in OAR 340-73-041.
- (63) **"Five-Day Biochemical Oxygen Demand (BOD**₅)" means the quantity of oxygen used in the biochemical oxidation of organic matter in five days at twenty (20) degrees centigrade under specified conditions and reported as milligrams per liter (mg/L).
- (64) "Fragipan" means a loamy subsurface horizon with high bulk density relative to the horizon above, seemingly cemented when dry, and weakly to moderately brittle when moist. Fragipans are mottled and low in organic matter. They impede movement of water, air, and growth of plant roots.
- (65) **"General Permit"** means a permit issued to a category of qualifying sources pursuant to OAR 340-45-033, in lieu of individual permits being issued to each source.
- (66) **"Governmental Unit"** means the state or any county, municipality, or political subdivision, or any agency thereof.
- (67) **"Grade"** means the rate of fall or drop in inches per foot or percentage of fall of a pipe.
- (68) **"Gray Water"** means household sewage other than ``black wastes'', such as bath water, kitchen waste water and laundry wastes.
- (69) **"Gray Water Waste Disposal Sump"** means a receptacle or series of receptacles designed to receive hand-carried gray water for disposal into the soil.
- (70) **"Grease and Oils"** means a component of sewage typically originating from food stuffs, consisting of compounds of alcohol or glycerol with fatty acids.
- (71) **"Groundwater Interceptor"** means any natural or artificial groundwater or surface water drainage system including agricultural drain tile, cut banks, and ditches which intercept and divert groundwater or surface water from the area of the absorption facility.
- (72) **"Hardpan"** means a hardened layer in soil caused by cementation of soil particles with either silica, calcium carbonate, magnesium carbonate, or iron and/or organic

matter. The hardness does not change appreciably with changes in moisture content. Hardpans impede movement of water and air and growth of plant roots.

- (73) **"Header Pipe"** means a tight jointed part of the sewage drainage conduit which receives septic tank effluent from the distribution box, or drop box, or effluent sewer and conveys it to the disposal area.
- (74) **"Headwall"** means a steep slope at the head or upper end of a land slump block or unstable landform.
- (75) **"Holding Tank"** means a watertight receptacle designed to receive and store sewage to facilitate disposal at another location.
- (76) **"Holding Tank System"** means an alternative system consisting the combination of a holding tank, service riser and level indicator (alarm), designed to receive and store sewage for intermittent removal for disposal at another location.
- (77) **"Hydrasplitter"** means a hydraulic device to proportion flow under pressure by the use of one or more orifices. Also may be referred to as a Hydrosplitter.
- (78) "Incinerator Toilet Facility" means "Combustion Toilet Facility".
- (79) "Individual System" means a system that is not a community system.
- (80) **"Individual Water Supply"** means a source of water and a distribution system which serves a residence or user for the purpose of supplying water for drinking, culinary, or household uses and which is not a public water supply system.
- (81) **"Industrial Waste"** means any liquid, gaseous, radioactive, or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade, or business, or from the development or recovery of any natural resources.
- (82) "Intermittent Sand Filter" means a conventional sand filter.
- (83) **"Intermittent Stream"** means any surface public water or groundwater interceptor that continuously flows water for a period of greater than two months in any one year, but not continuously for that year.
- (84) "Invert" is the lowest portion of the internal cross section of a pipe or fitting.
- (85) **"Large System"** means any on-site system with a projected daily sewage flow greater than two thousand five hundred (2,500) gallons.
- (86) "Lateral Pipe" means "Distribution Pipe".
- (87) "Mechanical Sewage Treatment Facility" means an aerobic sewage treatment facility.

[(88) "Medium Sand" means a mixture of sand with 100 percent passing the 3/8 inch sieve, 95 percent to 100 percent passing the No. 4 sieve, 80 percent to 100 percent passing the No. 8 sieve, 45 percent to 85 percent passing the No. 16 sieve, 15 percent to 60 percent passing the No. 30 sieve, 3 percent to 15 percent passing the No. 50 sieve, and 4 percent or less passing the No. 100 sieve.]

- **[(89)]** (88) "Nonwater-Carried Waste Disposal Facility" means any toilet facility which has no direct water connection, including pit privies, vault privies and portable toilets.
- **(90)** (89) "Occupant" means any person living or sleeping in a dwelling.

(91) (90) **"On-Site Sewage Disposal System"** means any existing or proposed on-site sewage disposal system including, but not limited to a standard subsurface, alternative, experimental or non-water carried sewage disposal system, installed or proposed to be installed on land of the owner of the system or on other land as to which the owner of the system has the legal right to install the system. This does not include systems that are designed to treat and dispose of Industrial Waste as defined in OAR Chapter 340, Division 45.

- **(92) (91) "Operating Permit"** means a WPCF permit issued pursuant to these rules.
- **[(93)]** (92) "Owner" means any person who alone, or jointly, or severally with others:
 - (a) Has legal title to any single lot, dwelling, dwelling unit, or commercial facility; or
 - (b) Has care, charge, or control of any real property as agent, executor, executrix, administrator, administratrix, trustee, commercial lessee, or guardian of the estate of the holder of legal title; or
 - (c) Is the contract purchaser of real property.

NOTE: Each such person as described in subsections (b) and (c) of this section, thus representing the legal title holder, is bound to comply with the provisions of these rules as if he were the legal title holder.

f(94)f (93) **"Permanent Groundwater Table"** means the upper surface of a saturated zone that exists year-round. The thickness of the saturated zone, and, as a result, the elevation of the permanent groundwater table may fluctuate as much as twenty (20) feet or more annually; but the saturated zone and associated permanent groundwater table will be present at some depth beneath land surface throughout the year.

- **[(95)]** (94) "Permit" means the written document issued and signed by the Agent which authorizes the permittee to install a system or any part thereof, which may also require operation and maintenance of the system.
- **[(96)]** (95) "Person" includes individuals, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the state and any agencies thereof, and the federal government and any agencies thereof.
- **[(97)]** (96) "Pollution" or "Water Pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.
- **f(98) (97) "Portable Toilet"** means any self contained chemical toilet facility that is housed within a portable toilet shelter and includes but is not limited to construction type chemical toilets.
- (99)] (98) "Portable Toilet Shelter" means any readily relocatable structure built to house a toilet facility.
- **f(100)](99) "Pressure Distribution Lateral"** means piping and fittings in pressure distribution systems which distribute septic tank or other treatment unit effluent to drain media through small diameter orifices.
- **f(101)f(100) "Pressure Distribution Manifold"** means piping and fittings in a pressure distribution system which supply effluent from pressure transport piping to pressure distribution laterals.
- **f(102)** (101) **"Pressure Distribution System"** means any system designed to uniformly distribute septic tank or other treatment unit effluent under pressure in an absorption facility or sand filter.
- **<u>f(103)</u><u>f(102)</u>** "**Pressure Transport Piping**" means piping which conveys sewage effluent from a septic tank or other treatment or distribution unit by means of a pump or siphon.
- $\frac{f(104)f(103)}{f(103)}$ "Pretreatment" means the wastewater treatment which takes place prior to discharging to any component of an on-site sewage treatment and disposal system, including but not limited to, pH adjustment, oil and grease removal, BOD₅ and TSS reduction, screening and detoxification.

- **f(105)** (104) **"Prior Approval"** means a written approval for on-site sewage disposal, for a specific lot, issued prior to January 1, 1974.
- **f(106)f(105) "Prior Construction Permit"** means a subsurface sewage disposal system construction permit issued prior to January 1, 1974, by a county that had an ordinance requiring construction permits for subsurface sewage disposal systems.
- **[(107)]** (106) **"Privy"** means a structure used for disposal of human waste without the aid of water. It consists of a shelter built above a pit or vault in the ground into which human waste falls.
- **f(108)f(107) "Projected Daily Sewage Flow"** means the peak quantity of sewage a facility is forecast to produce on a daily basis upon which system sizing and design is based. It may be referred to as design flow. The Projected Daily Sewage Flow allows for a safety margin and reserve capacity for the system during periods of heavy use.
- f(109)f (108) "Public Health Hazard" means a condition whereby there are sufficient types and amounts of biological, chemical or physical, including radiological, agents relating to water or sewage which are likely to cause human illness, disorders or disability. These include, but are not limited to, pathogenic viruses, bacteria, parasites, toxic chemicals, and radioactive isotopes.
- (110)] (109) "Public Waters" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.
- **[(111)]** (110) **"Recirculating Gravel Filter (RGF)"** means a type of gravel filter wastewater treatment system which utilizes an effluent recycle system where a portion of the filtered effluent is mixed with septic tank effluent in a recirculation/dilution tank and redistributed to the filter, in conformance with these rules.
- **f(112) (111) (Recirculating Gravel Filter System)** means a Recirculating Gravel Filter and a absorption facility used to treat and dispose of sewage.
- **f(113) (112) "Redundant Disposal Field System"** means a system in which two complete disposal systems are installed, the disposal trenches of each system alternate with each other and only one system operates at a given time.
- **f(114)f(113) "Repair"** means installation of all portions of a system necessary to eliminate a public health hazard or pollution of public waters created by a failing system. Major

repair is defined as the replacement of the soil absorption system. Minor repair is defined as the replacement of a septic tank, broken pipe, or any part of the on-site sewage disposal system except the soil absorption system.

- **f(115)f(114)** "**Residential Strength Wastewater**" means the primary sewage effluent from a septic tank which does not <u>typically</u> exceed the following parameters: Five-Day Biochemical Oxygen Demand (BOD₅) of 300 mg/L; Total Suspended Solids (TSS) of 150 mg/L; Total Kjeldahl Nitrogen (TKN) of 150 mg/L; and Oil & Grease of 25 mg/L. Other contaminants may also be present in the wastewater, however, they shall not exceed the concentrations or quantities normally found in residential sewage. Effluent parameters are to be measured using approved Standard Method or EPA procedures.
- f(116)f (115)
 "Sand Filter Media" means a medium sand or other approved material used in a conventional sand filter. The media shall be durable and inert so that it will maintain its integrity and not collapse or disintegrate with time and shall not be detrimental to the performance of the system. The particle size distribution of the media shall be determined through a sieve analysis conducted in accordance with ASTM C-117 and ASTM C-136. The media shall comply with the following particle size distribution: 100 percent passing the 3/8 inch sieve, 95 percent to 100 percent passing the No. 4 sieve, 80 percent to 100 percent passing the No. 16 sieve, 15 percent to 60 percent passing the No. 30 sieve, 3 percent to 15 percent passing the No. 50 sieve, and 4 percent or less passing the No. 100 sieve.
- **<u>f(117)</u><u>(116)</u> "Sand Filter Surface Area"** means the area of the level plane section in the medium sand horizon of a conventional sand filter located two (2) feet below the bottom of the drain media containing the pressurized distribution piping.
- **f(118)f(117) "Sand Filter System"** means the combination of septic tank or other treatment unit, dosing system with effluent pump and controls, or dosing siphon, piping and fittings, sand filter, and absorption facility used to treat and dispose of sewage.
- **[(119)]** (118) **"Sanitary Drainage System"** means that part of the system of drainage piping that conveys untreated sewage from a building or structure to a septic tank or other treatment facility, service lateral at the curb or in the street or alley, or other disposal terminal holding human or domestic sewage. The sanitary drainage system consists of a building drain or building drain and building sewer.
- **f(120)f(119) "Saprolite"** means weathered material underlying the soil that grades from soft thoroughly decomposed rock to rock that has been weathered sufficiently so that it can be broken in the hands or cut with a knife. It does not include hard bedrock or hard fractured bedrock. It has rock structure instead of soil structure.

- **f(121)** (120) "Saturated Zone" means a three (3) dimensional layer, lens, or other section of the subsurface in which all open spaces including joints, fractures, interstitial voids, pores, etc. are filled with groundwater. The thickness and extent of a saturated zone may vary seasonally or periodically in response to changes in the rate or amount of groundwater recharge or discharge.
- **[(122)]** (121) "Scum" means a mass of sewage solids floating at the surface of sewage which is buoyed up by entrained gas, grease, or other substances.
- [(123)] (122) "Seepage Area" means "Effective Seepage Area".
- **[(124)]** (123) "Seepage Bed" means an absorption system having disposal trenches wider than three (3) feet.
- **<u>f(125)</u><u>(124)</u>** "Seepage Pit" means a "cesspool" which has a treatment facility such as a septic tank ahead of it.
- **[(126)]** (125) "Seepage Trench System" means a system with disposal trenches with more than six (6) inches of drain media below the distribution pipe.
- **<u>f(127)</u><u>f(128)</u>** "Self-Contained Nonwater-Carried Waste Disposal Facility" includes, but is not limited to, vault privies, chemical toilets, combustion toilets, recirculating toilets, and portable toilets, in which all waste is contained in a watertight receptacle.
- **f(128)f(127) "Septage"** means the domestic liquid and solid sewage pumped from septic tanks, cesspools, holding tanks, vault toilets, chemical toilets or other similar domestic sewage treatment components or systems and other sewage sludge not derived at sewage treatment plants.
- **(129)** (128) **"Septic Tank"** means a watertight receptacle which receives sewage from a sanitary drainage system, is designed to separate solids from liquids, digest organic matter during a period of detention, and allow the liquids to discharge to a second treatment unit or to a soil absorption facility. (See OAR 340-73-025 and 340-73-030).
- **f(130) (129) "Septic Tank Effluent"** means partially treated sewage which is discharged from a septic tank.
- **[(131)]** (130) "Serial Distribution" means the distribution of effluent to a set of disposal trenches constructed at different elevations in which one (1) trench at a time receives effluent in consecutive order beginning with the uppermost trench, by means of a Drop Box, a serial overflow or other approved distribution unit. The effluent in an individual trench must reach a level of two (2) inches above the distribution pipe before effluent is distributed to the next lower trench.

f(132)f(131) "Sewage" means water-carried human and animal wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such groundwater infiltration, surface waters, or industrial waste as may be present.

[(133)] (132) "Sewage Disposal Service" means:

- (a) The construction of on-site sewage disposal systems (including the placement of portable toilets), or any part thereof; or
- (b) The pumping out or cleaning of on-site sewage disposal systems (including portable toilets), or any part thereof; or
- (c) The disposal of material derived from the pumping out or cleaning of on-site sewage disposal systems (including portable toilets); or
- (d) Grading, excavating, and earth-moving work connected with the operations described in subsection (a) of this section.
- **f(134)f(133)** "Sewage Stabilization Pond" means a pond designed to receive the raw sewage flow from a dwelling or other building and retain that flow for treatment without discharge.
- (135)] (134) "Slope" means the rate of fall or drop in feet per one hundred (100) feet of the ground surface. It is expressed as percent of grade.
- **f(136)f(137) "Soil Permeability Rating"** refers to that quality of the soil that enables it to transmit water or air, as outlined in the United States Department of Agriculture Handbook, Number 18, entitled Soil Survey Manual.
- [(137)] (136) "Soil Separate" means the size of soil particles according to Table 7.
- **[(138)]** (137) **"Soil Texture"** means the amount of each soil separate in a soil mixture. Field methods for judging the texture of a soil consist of forming a cast of soil, both dry and moist, in the hand and pressing a ball of moist soil between thumb and finger:
 - (a) The major textural classifications are defined as follows. (See Table 6):
 - (A) Sand: Individual grains can be seen and felt readily. Squeezed in the hand when dry, this soil will fall apart when the pressure is released. Squeezed when moist, it will form a cast that will hold its shape when the pressure is released, but will crumble when touched;

- (B) Loamy Sand: Consists primarily of sand, but has enough silt and clay to make it somewhat cohesive. The individual sand grains can readily be seen and felt. Squeezed when dry, the soil will form a cast which will readily fall apart, but if squeezed when moist, a cast can be formed that will withstand careful handling without breaking;
- (C) Sandy Loam: Consists largely of sand, but has enough silt and clay present to give it a small amount of stability. Individual sand grains can be readily seen and felt. Squeezed in the hand when dry, this soil will readily fall apart when the pressure is released. Squeezed when moist, it forms a cast that will not only hold its shape when the pressure is released, but will withstand careful handling without breaking. The stability of the moist cast differentiates this soil from sand;
- (D) Loam: Consists of an even mixture of the different sizes of sand and of silt and clay. It is easily crumbled when dry and has a slightly gritty, yet fairly smooth feel. It is slightly plastic. Squeezed in the hand when dry, it will form a cast that will withstand careful handling. The cast formed of moist soil can be handled freely without breaking;
- (E) Silt Loam: Consists of a moderate amount of fine grades of sand, a small amount of clay, and a large quantity of silt particles. Lumps in a dry, undisturbed state appear quite cloddy, but they can be pulverized readily; the soil then feels soft and floury. When wet, silt loam runs together in puddles. Either dry or moist, casts can be handled freely without breaking. When a ball of moist soil is passing between thumb and finger, it will not press out into a smooth, unbroken ribbon, but will have a broken appearance;
- (F) Clay Loam: Consists of an even mixture of sand, silt, and clay, which breaks into clods or lumps when dry. When a ball of moist soil is pressed between the thumb and finger, it will form a thin ribbon that will readily break, barely sustaining its own weight. The moist soil is plastic and will form a cast that will withstand considerable handling;
- (G) Silty Clay Loam: Consists of a moderate amount of clay, a large amount of silt, and a small amount of sand. It breaks into moderately hard clods or lumps when dry. When moist, a thin ribbon or one-eighth (1/8) inch wire can be formed between thumb and finger that will sustain its weight and will withstand gentle movement;
- (H) Silty Clay: Consists of even amounts of silt and clay and very small amounts of sand. It breaks into hard clods or lumps when dry.

When moist, a thin ribbon or one-eighth (1/8) inch or less sized wire formed between thumb and finger will withstand considerable movement and deformation;

- (I) Clay: Consists of large amounts of clay and moderate to small amounts of sand. It breaks into very hard clods or lumps when dry. When moist, a thin, long ribbon or one-sixteenth (1/16) inch wire can be molded with ease. Fingerprints will show on the soil, and a dull to bright polish is made on the soil by a shovel.
- (b) These and other soil textural characteristics are also defined as shown in the United States Department of Agriculture Textural Classification Chart which is hereby adopted as part of these rules. This textural classification chart is based on the Standard Pipette Analysis as defined in the United States Department of Agriculture, Soil Conservation Service Soil Survey Investigations Report No. 1. (See Table 6).

[(139)] (138) "Soil With Rapid or Very Rapid Permeability" means:

- (a) Soil which contains thirty-five (35) percent or more of coarse fragments two (2) millimeters in diameter or larger by volume with interstitial soil of sandy loam texture or coarser as defined in subsection *f(138)f (137)* (a) of this rule and as classified in Soil Textural Classification Chart, Table 6; or
- (b) Coarse textured soil (loamy sand or sand as defined in section <u>f(138)</u> (137) of this rule and as classified in Soil Textural Classification Chart, Table 6); or
- (c) Stones, cobbles, gravel, and rock fragments with too little soil material to fill interstices larger than one (1) millimeter in diameter.
- **[(140)]** (139) "Split Waste Method" means a procedure where "black waste" sewage and "gray water" sewage from the same dwelling or building are disposed of by separate systems.
- **f(141)f(140) "Stabilized Dune"** means a sand dune that is similar to an active dune except vegetative growth is dense enough to prevent blowing of sand. The surface horizon is either covered by a mat of decomposed and partially decomposed leaves, needles, roots, twigs, moss, etc., or to a depth of at least six (6) inches contains roots and has a color value of three (3) or less.
- f(142)] (141) "Standard Subsurface System" means an on-site sewage disposal system consisting of a septic tank, distribution unit and absorption facility constructed in accordance with OAR 340-71-220, using six (6) inches of drain media below the distribution pipe, and maintaining not less than eight (8) feet of undisturbed earth between disposal trenches.

- **f(143)f(142)** "Steep Slope System" means a seepage trench system installed on slopes greater than thirty (30) percent and less than or equal to forty-five (45) percent, pursuant to these rules.
- **<u>f(144)</u><u>f(143)</u></u> "Subsurface Sewage Disposal" means the physical, chemical or bacteriological breakdown and aerobic treatment of sewage in the unsaturated zone of the soil above any temporarily perched groundwater body.**
- **[(145)]** (144) "Subsurface Disposal System" means a cesspool or the combination of a septic tank or other treatment unit and effluent sewer and absorption facility.
- [(146)] (145) "Surface Waters" means public waters, but excludes underground waters and wells.
- [(147)] (146) "System" means "On-Site Sewage Disposal System".
- **[(148)]** (147) **"Temporary Groundwater Table"** means the upper surface of a saturated zone that exists only on a seasonal or periodic basis. Like a permanent groundwater table, the elevation of a temporary groundwater table may fluctuate. However, a temporary groundwater table and associated saturated zone will dissipate (dry up) for a period of time each year.
- **[(149)]** (148) **"Test Pit"** means an open pit dug to sufficient size and depth to permit thorough examination of the soil to evaluate its suitability for subsurface sewage disposal.
- **f(150)f(149) "Tile Dewatering System"** means an alternative system in which the absorption facility is encompassed with field collection drainage tile, the purpose of which is to reduce and control a groundwater table to create a zone of aeration below the bottom of the absorption facility.
- f(151)f(150) "Toilet Facility" means a fixture housed within a toilet room or shelter for the purpose of receiving black waste.
- <u>*f(152)f(*151)</u> **"Total Kjeldahl Nitrogen (TKN)"** means the combination of ammonia and organic nitrogen but does not include nitrate and nitrite nitrogen.
- **f(153)f(152) "Total Suspended Solids"** (TSS) means solids in sewage that can be removed readily by standard filtering procedures in a laboratory and reported as milligrams per liter (mg/L).
- **f(154)f(153) "Treatment"** means the alteration of the quality of wastewaters by physical, chemical or biological means or combination thereof such that tendency of said wastes to cause degradation in water quality, risk to public health or degradation of environmental conditions is reduced.

- **[(155)]** (154) "Underdrain Media" means that material placed under the sand filter media in a sand filter. It shall be clean, washed pea gravel with 100 percent passing the 1/2 inch sieve, 18 to 100 percent passing the 1/4 inch sieve, 5 to 75 percent passing the No. 4 sieve, 24 percent or less passing the No. 10 sieve, 2 percent or less passing the No. 10 sieve.
- **f(156)** (155) **"Unstable Landforms"** means areas showing evidence of mass downslope movement such as debris flow, landslides, rockfall, and hummock hill slopes with undrained depressions upslope. Unstable landforms may exhibit slip surfaces roughly parallel to the hillside; landslide scars and curving debris ridges; fences, trees, and telephone poles which appear tilted; or tree trunks which bend uniformly as they enter the ground. Active sand dunes are unstable landforms.
- **f(157)f(158) "Vertisols"** means a mineral soil characterized by a high content of swelling-type clays which in dry seasons, causes the soils to develop deep wide cracks.
- **f(158)f(157) "WPCF Permit"** means a Water Pollution Control Facilities Permit which has been issued pursuant to OAR Chapter 340, Division 14 and OAR 340-71-162.
- *[(159)]* (158) "Wastewater" means Sewage.
- **f(160)f**(159) **"Zone of Aeration"** means the unsaturated zone that occurs below the ground surface and above the point at which the upper limit of the water table exists.

Amend OAR 340-71-120 as follows:

- (1) Oregon Revised Statutes (ORS) 454.725 authorizes the Department to enter into agreements with local governmental units for those units to perform the duties of the Department and become the Department's Agent in the permitting of on-site sewage disposal systems, including receiving and processing applications, issuing permits and performing required inspections for all on-site systems. The Department shall assume those responsibilities in nonagreement counties. The division of responsibilities is set forth as follows:
 - (a) Systems conforming with the treatment and disposal criteria described in this division, and which are not required to have a WPCF Permit shall have site evaluations, plan reviews, permits and inspections conducted or processed by the Agent, unless otherwise allowed within this division;
 - (b) All systems required to have a WPCF Permit shall be regulated by the Department. OAR 340-71-130(15) and (16) describe those systems which must be constructed and operated by WPCF Permit. The WPCF permitting process is described in OAR 340-71-162. The Department may issue General Permits for some of the categories requiring WPCF Permits. The Department may,

through intergovernmental agreements, delegate to the Agent site evaluations, construction inspections, receipt of registration applications and distribution of the Department's General Permit, and periodic compliance inspections. Although the Agent may solicit voluntary compliance with the Department's General Permit, ultimate enforcement responsibility shall remain with the Department. The agreement shall establish a level of compensation to be paid for the services provided.

- (2) Each and every owner of real property is jointly and severally responsible for:
 - (a) Disposing of sewage on that property in conformance with the rules of the Department; and
 - (b) Connecting all plumbing fixtures on that property, from which sewage is or may be discharged, to a sewerage facility or on-site sewage disposal system approved by the Department; and
 - (c) Maintaining, repairing, and/or replacing the system as necessary to assure proper operation of the system.

[(3) Agreement counties may, by ordinance, adopt requirements for operation and maintenance of systems within that county. Such requirements must be approved by the Director.]

[(4)] <u>(3)</u> The Department may, on its own or through agreements with local governments, conduct a pilot program (not to exceed two (2) years), utilizing private contractors. To the extent consistent with ORS Chapter 454, and other applicable statutes, the pilot program may allow private contractors to perform the technical review necessary for the issuance of on-site sewage disposal installation permits, Certificates of Satisfactory Completion or other related on-site activities. In all instances, the private contractor's technical review shall be submitted to the Agent for the Agent's review and acceptance or denial. The private contractors must comply with state registration acts which may require registration for people performing these activities. The Department or Agent may consider the enforcement history and criminal record of a person proposing to enter into an agreement under this Section. At the end of the pilot program the Department shall report to the Commission with its findings and recommendations. After the Departments report, the Commission may extend the pilot program for any duration, but shall provide for periodic review of the program.

Amend OAR 340-71-130(1) as follows:

(1) **Public Waters or Public Health Hazards.** If, in the judgment of the Agent, proposed operation of a system would cause pollution of public waters or create a public health hazard, system installation or use shall not be authorized. If, in the judgment of the

Agent, the minimum standards contained in these rules do not afford adequate protection of public waters or public health, the requirements shall be more stringent. This may include, but is not limited to, increasing setbacks, increasing drainfield sizing and f_{rf} / or utilizing an Alternative System. If the Agent imposes requirements more stringent than the minimum, the Agent shall provide the applicant with a written statement of the specific reasons why the requirements are necessary.

Amend OAR 340-71-130(15) as follows:

- (15) **Operating Permit Requirements.** The following systems shall be constructed and operated under a renewable WPCF permit, issued pursuant to OAR 340-71-162:
 - (a) Any system or combination of systems located on the same property or serving the same facility with a total projected daily sewage flow design capacity greater than 2,500 gallons per day. Flows from single family residences or equivalent flows on separate systems need not be included;
 - b) A system of any size, if the sewage produced is greater than residential strength wastewater;
 - (c) Holding tanks;

[NOTE] EXCEPTIONS : This requirement does not apply to septic tanks used as temporary holding tanks pursuant to OAR 340-71-160(11), or to holding tanks described in OAR 340-71-340(5).

- (d) A system [,] which includes a conventional sand filter as part of the treatment process [,] that serves a commercial facility;
- (e) A system which includes an aerobic treatment facility as part of the treatment process if:
 - (A) The system serves a commercial facility; or
 - (B) The system does not meet the requirements of OAR 340-71-220 and 340-71-345.
- (f) Recirculating Gravel Filters (RGFs);
- (g) Other systems that are not described in this division, that do not discharge to surface public waters.

\mend OAR 340-71-140 as follows:

340-71-140 FEES - GENERAL

(1) Except as provided in section (5) of this rule, the following non-refundable fees are required to accompany applications for site evaluations, permits, licenses and services provided by the Department.

ON-SITE MAXIMUM SEWAGE DISPOSAL SYSTEMS FEE

- (a) New Site Evaluation:
 - (A) Single Family Dwelling:
 - (i) First Lot...... \$ <u>335</u> [380];
 - (ii) Each Additional Lot Evaluated During Initial Visit..... \$ 205;
 - (B) Commercial Facility System:

 - (ii) For systems with projected sewage flows greater than one thousand (1,000) gallons but not more than 5,000 gallons, the site evaluation application fee shall be \$ 335 [380] plus an additional \$ 90 [100] for each 500 gallons or part thereof above 1,000 gallons.

 - (D) Fees for site evaluation applications made to an agreement county shall be in accordance with that county's fee schedule;
 - (E) Each fee paid for a site evaluation report entitles the applicant to as many site inspections on a single parcel or lot as are necessary to determine site suitability for a single system. The applicant may request additional site inspections within ninety (90) days of the initial site evaluation, at no extra cost;
 - (F) Separate fees shall be required if site inspections are to determine site suitability for more than one (1) system on a single parcel of land.

- (b) Construction-Installation Permit:
 - (A) For First One Thousand (1,000) Gallons Projected Daily Sewage Flow:

(i) Standard On-Site System	\$ <u>460</u> [565] ;
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(ii) Alternative System:

(I)	Aerobic System	\$ <u>460</u> <i>[565]</i> ;
(II)	Capping Fill	\$ <u>710</u> [860] ;
(III)	Cesspool	\$ <u>460</u> <i>[</i> 565] ;
(IV)	Disposal Trenches in Saprolite	\$ <u>460</u> <i>[</i> 565] ;
(V)	Evapotranspiration-Absorption	\$ <u>460</u> <i>[</i> 565] ;
(VI)	Gray Water Waste Disposal Sump	\$ <u>200</u> [240] ;
(VII)	Pressure Distribution	\$ <u>690</u> [860] ;
(VIII)	Redundant	\$ <u>460</u> <i>[565]</i> ;
(IX)	Sand Filter	\$ <u>880</u> <i>[1,100]</i> ;
(X)	Seepage Pit	\$ <u>460</u>
(XI)	Seepage Trench	\$ <u>460</u> <i>[</i> 565] ;
(XII)	Steep Slope	\$ <u>460</u> <i>[565]</i> ;
(XIII)	Tile Dewatering	\$ <u>690</u> [860] ;

- (iii) At the discretion of the Agent, the permittee may be assessed a reinspection fee, not to exceed $140 f^{200}$, when a precover inspection correction notice requires correction of improper construction and, at a subsequent inspection, the Agent finds system construction deficiencies have not been corrected. The Agent may elect not to make further precover inspections until the reinspection fee is paid;
- (iv) With the exceptions of sand filter and pressure distribution systems, a \$25 fee may be added to all permits that specify the use of a pump or dosing siphon.
- (B) For systems with projected daily sewage flows greater than one thousand (1,000) gallons, the Construction-Installation permit fee shall be equal to the fee required in paragraph (1)(b)(A) of this rule plus \$ 40 [50] for each five hundred (500) gallons or part thereof above one thousand (1,000) gallons;

NOTE: Fees for construction permits for systems with projected daily sewage flows greater than two thousand five hundred (2,500) gallons shall be in accordance with the fee schedule for WPCF permits.

- (C) Commercial Facility System, Plan Review:
 - (i) For a system with a projected daily sewage flow of less than six hundred (600) gallons, the cost of plan review is included in the permit application fee;
 - (ii) For a system with a projected daily sewage flow of six hundred (600) gallons, but not more than one thousand (1,000) gallons projected daily sewage flow....\$ 165 [200];
 - (iii) For a system with a projected sewage flow greater than 1,000 gallons, the plan review fee shall be $\frac{165}{100}$, plus an additional 25 for each five hundred (500) gallons or part thereof above one thousand (1,000) gallons, to a maximum sewage flow limit of two thousand five hundred (2,500) gallons per day;
- (D) Permit Renewal:

	(i)	If Field	d Visit Required	\$ <u>240</u>	[290] ;
	(ii)	No Fie	eld Visit Required	\$ 85;	
		NOTE: Renewal of a permit may be granted to the opermittee if an application for permit renewal is filed prior original permit expiration date. Refer to OAR 340-71-160(1			or to the
(E)	Alterat	eration Permit			
(F)	Repair Permit:				
	(i)	Single Family Dwelling:			
		(I)	Major	\$ <u>245</u>	[310] ;
		(II)	Minor	\$ <u>125</u>	[150] .
	(ii)	Commercial Facility:			
		(I)	Major — The appropriate fees identified (1)(b)(A), (B), and (C) of this rule apply;	in pa	ragraphs
		(II)	Minor	\$ <u>200</u>	[280] .
(G)	Permit	Denial	Review	\$ <u>290</u>	[335] .

(C)	Authorization Notice:					
	(A)	If Field Visit Required	\$ <u>280</u> [350] ;			
	(B)	No Field Visit Required	\$ 90;			
	(C)	Authorization Notice Denial Review	\$			
(d)		al Evaluation of Alternative System re Required)	\$ <u>235</u> [280] ;			
(e)		Evaluation of Temporary or HardshipMobile Home\$ 235 [280] ;				
(f)	Varia	nce to On-Site System Rules	\$ 225;			
	NOTE: The variance application fee may be waived if the applicant meets the requirements of OAR 340-71-415(5).					
(g)	Rural Area Variance to Standard Subsurface Rules:					
	(A)	Site Evaluation	\$ <u>335</u>			
		NOTE: In the event there is on file a site evaluation report that is less than ninety (90) days old, the site evaluat waived.	-			
	(B)	Construction-Installation Permit — The appropriate f subsection (1)(b) of this rule applies.	ee identified in			
(h)	Sewaş	Sewage Disposal Service:				
	(A)	New Business License	\$ <u>260</u> [300] ;			
	(B)	Renewal of Existing and Valid Business License	\$ 190 <i>[</i> 200] ;			
	(C)	Transfer of or Amendments to License	\$ <u>135</u> [150] ;			
	(D)	Reinstatement of Suspended License	\$ <u>160</u> [175] ;			
	(E)	Pumper Truck Inspection, First Vehicle:				
		(i) Each Inspection	\$ <u>80</u> <i>[100]</i> ;			

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ATTACHMENT A

(i)	(ii) Each Additional Vehicle, Each Inspection Experimental Systems: Permit	\$ <u>45</u> [50] ; \$ <u>3,670</u> - [5,000] ;
(j)	Existing System Evaluation Report	\$ <u>285</u> [350] .

NOTE: The fee shall not be charged for an evaluation report on any proposed repair, alteration or extension of an existing system.

- (2) **Contract County Fee Schedules.** Pursuant to ORS 454.745(4), fee schedules which exceed the maximum fees in ORS 454.745(1) and section (1) of this rule shall be established by rule.
- (3) Contract County Fee Schedules, General:
 - (a) Each county having an agreement with the Department under ORS 454.725 shall adopt a fee schedule for services rendered and permits to be issued. The county fee schedule shall not include the Department's surcharge fee identified in section 4 of this rule;
 - (b) A copy of the fee schedule and any subsequent amendments to the schedule shall be forwarded to the Department;
 - (c) Fees shall not:
 - (A) Exceed actual costs for efficiently conducted services;
 - (B) Exceed the maximum fee established in section (1) of this rule, unless approved by the Commission pursuant to ORS 454.745(4).
- (4) **Surcharge**. In order to offset a portion of the administrative and program oversight costs of the statewide on-site sewage disposal program, a surcharge of \$30 [35] for each site evaluated, for each construction installation permit and all other activities for which an application is submitted, shall be levied by the Department and by each Agreement County. Proceeds from surcharges collected by the Department and Agreement Counties shall be accounted for separately. Each Agreement County shall forward the proceeds to the Department as negotiated in the memorandum of agreement (contract) between the county and the Department.
- (5) **Refunds**. The Agent may refund all or a portion of a fee accompanying an application if the applicant withdraws the application before the Agent has done any field work or other substantial review of the application.
- (6) Fees for WPCF Permits. The following fee schedule shall apply to WPCF Permits for on-site sewage disposal systems issued pursuant to OAR 340-71-162:
 - (a) Application filing fee (all categories)..... \$ 50;

(b)	Permit processing fees for sewage lagoons and						
	other on-site disposal systems over 1,200 gpd:						
	(A)	New Applications	\$ 2,000;				
	(B)	Permit Renewals (including request for					
		effluent limit modifications)	\$ 1,000;				
	(C)	Permit Renewal (without request for					
		effluent limit modifications)	\$ 500;				
	(D)	Permit modification (involving increase in					
		effluent limits)	\$ 1,000;				
	(E)	Permit modification (not involving an increase					
		in effluent limits)	\$ 500;				
(c)	Perm	Permit processing fees for on-site systems of 1,200 gpd or less:					
	(A)						
	(B)	Permit Renewals (involving request for effluent					
		limit modifications	\$ 200;				
	(C)	Permit Renewals (without request for effluent	· · · ·				
		limit modifications)	\$100;				
	(D)	Permit Modifications (involving increase in					
		effluent limitations)	\$150;				
	(E)	Permit Modifications (not involving an increase	· · ·				
		in effluent limits)	\$ 100;				
(d)	Regis	stration fee for General Permits	\$150;				
(e)	Site H	Site Evaluation Fee:					
. ,	(A)	Facilities with design flow of 5,000 gpd or less,					
		same as section (1)(a) of this rule;					
	(B)	Facilities with design flow greater than					
		5,000 gpd	\$ 1,200;				
		, Ør	· · · ·				
(f)	Site I	Evaluation Confirmation Fee	\$ 350;				
	NOT	E: A Site Evaluation Confirmation Fee is required if the	site evaluation is				
	perfo	performed by a qualified consultant but, through the site evaluation review					
	proce	ess, a site visit is still required by the Department or Agent.					
(g)	Plan	Plan Review Fee:					
	(A) Commercial Facilities with design flows less than						
		5,000 gpd same as paragraph (1)(b)(C) of this rule;					
	(B)	Commercial Facilities with design flows of					
		5,000 gpd or more	\$ 5,000;				
	(C)	Non-commercial Facilities	\$ 100;				

NOTE: A plan review fee is required when engineered plans must be reviewed for a facility which requires a WPCF permit.

Annua	l Comp	liance Determination Fee:	
(A)	On-site sewage lagoon with no discharge		
(B)	On-site		
	WPCF Permit or general permit:		
	(i)	Standard or alternative subsurface	
		system not listed below, with design	
		flow of 20,000 gpd or more	\$ 500;
	(ii)	Standard or alternative subsurface	
		system not listed below with design	
		flow less than 20,000 gpd	\$ 250;
	(iii)	Aerobic systems, 1,500 gpd or more	\$ 500;
	(iv)	Aerobic systems, less than 1,500	\$ 250;
	(v)	Recirculating Gravel Filter, 1,500 gpd or more	\$ 500;
	(vi)	Recirculating Gravel Filter, less than 1,500 gpd	\$ 250;
	(vii)	Sand Filter, 1,500 gpd or more	\$ 500;
	(viii)	Sand Filter, less than 1,500 gpd	\$ 250;
	(ix)	Holding tanks	\$ 200.

NOTE: The annual compliance determination fee (ACDF) is due July of each year. For permits which are issued between July 1 and September 31, the full fee is due before the permit will be issued. For permits issued after September 31, the ACDF will be prorated by calendar quarter.

Amend OAR 340-71-162 (17) as follows:

(h)

- (17) Rules Which Do Not Apply to WPCF Applicants or Permittees.
 - (a) Because the permit review, issuance, and appeal procedures for WPCF permits are different from those of other on-site permits regulated by these rules, the following portions within this division do not apply to WPCF applicants or permittees: OAR 340-71-155; 340-71-160(6), (8), (9), and (10); 340-71-165(1); 340-71-170; 340-71-175; 340-71-185; 340-71-195; 340-71-200; 340-71-205; 340-71-210; 340-71-215(1), (2), (3); 340-71-270; 340-71-200; 340-71-205; 340-71-295(1); 340-71-305; 340-71-320; 340-71-325; 340-71-330; 340-71-345; 340-71-360(2)(b)(B); 340-71-410; 340-71-415; 340-71-420; 340-71-425; 340-71-430; 340-71-435; 340-71-440; *fandf* 340-71-445; and 340-71-500;
 - (b) Permit applicants and permittees are not subject to any WPCF permit-related fees other than those specifically contained within OAR 340-71-140;

(c) The following portions of OAR Chapter 340, Division 73, do not apply to WPCF applicants or permittees: OAR 340-73-030(1); 340-73-065; 340-73-070; and 340-73-075.

Amend OAR 340-71-205(1) as follows:

(1) Authorization Notice Required. Except as otherwise allowed in this division no person shall place into service, <u>re-connect to</u>, change the use of, or increase the projected daily sewage flow into an existing on-site sewage disposal system without first obtaining an Authorization Notice, Construction-Installation Permit or Alteration Permit as appropriate.

EXCEPTIONS:

- -1- An Authorization Notice is not required when a mobile home is replaced with similar mobile home in a mobile home park, or a recreation vehicle is replaced by another recreation vehicle in a lawful recreation vehicle park, provided the sanitary wastewater system has adequate capacity for safe treatment and disposal of sewage generated within the park;
- -2- An Authorization Notice is not required for placing into service a previously unused system for which a Certificate of Satisfactory Completion has been issued within five (5) years of the date such system is placed into service, providing the projected daily sewage flow does not exceed the design flow, and there is no other violation of these rules.

Amend OAR 340-71-220(1) as follows:

- (1) Criteria For Standard Subsurface System Approval. In order to be approved for a standard subsurface system each site must meet all the following conditions:
 - (a) Effective soil depth shall extend thirty (30) inches or more from the ground surface as shown in Table 3. A minimum six (6) inch separation shall be maintained between the layer that limits effective soil depth and the bottom of the absorption facility.
 - (b) Water table levels shall be predicted using Standards in OAR 340-71-130(24).
 - (A) A permanent water table shall be four (4) feet or more from the bottom of the absorption facility.

EXCEPTION: In defined geographic areas where the Department has determined through a groundwater study that degradation of groundwater would not be caused nor public health hazards created. In the event this

exception is allowed, the rule pertaining to a temporary water table shall apply.

- (B) A temporary water table shall be twenty-four (24) inches or more below the ground surface. An absorption facility shall not be installed deeper than the level of the temporary water table;
- (C) Curtain Drains. A curtain drain may be used to intercept and/or drain temporary water from a disposal area; however, it may be required to demonstrate that the site can be de-watered prior to issuing a Construction-Installation permit. Curtain drains may be used only on sites with adequate slope to permit proper drainage. Unless otherwise authorized by the Agent, each outlet shall be protected by a short section of Schedule 40 PVC or ABS plastic pipe and a grill to exclude rodents. Where required, curtain drains are an integral part of the system, but do not need to meet setback requirements to property lines, wells, streams, lakes, ponds or other surface waterbodies which are required of the sewage disposal area.
- (c) Soil with rapid or very rapid permeability shall be thirty six (36) inches or more below the ground surface. A minimum eighteen (18) inch separation shall be maintained between soil with rapid or very rapid permeability and the bottom of disposal trenches.

EXCEPTION: Sites may be approved with no separation between the bottom of disposal trenches and soil as defined in OAR 340-71-100 (**138 [139]**) (a) and (b), with rapid or very rapid permeability, and disposal trenches may be placed into soil as defined in OAR 340-71-100 (**138 [139]**) (a) and (b), with rapid or very rapid permeability if any of the following conditions occur:

- -1- A confining layer occurs between the bottom of disposal trenches and the groundwater table. A minimum six (6) inch separation shall be maintained between the bottom of disposal trenches and the top of the confining layer; or
- -2- A layer of non-gravelly (less than 15% gravel) soil with sandy loam texture or finer at least eighteen (18) inches thick occurs between the bottom of the disposal trenches and the groundwater table; or
- -3- The projected daily sewage flow does not exceed a loading rate of four hundred fifty (450) gallons per acre per day.
- (d) Slopes shall not exceed thirty (30) percent and the slope/depth relationship set forth in **Table 3**;

- (e) The site has not been filled or the soil has not been modified in a way that would, in the opinion of the Agent, adversely affect functioning of the system;
- (f) The site shall not be on an unstable land form, where operation of the system may be adversely affected;
- (g) The site of the initial and replacement absorption facility shall not be covered by asphalt or concrete, or subject to vehicular traffic, livestock, or other activity which would adversely affect the soil;
- (h) The site of the initial and replacement absorption facility will not be subjected to excessive saturation due to, but not limited to, artificial drainage of ground surfaces, driveways, roads, and roof drains;
- (i) Setbacks in Table 1 can be met:
 - (A) Surface Waters Setbacks. Setback from streams or other surface waters shall be measured from bank drop-off or mean yearly highwater mark, whichever provides the greatest separation distance;
 - (B) Lots Created Prior to May 1, 1973. For lots or parcels legally created prior to May 1, 1973, the Agent may approve installation of a standard or alternative system with a setback from surface public waters of less than one hundred (100) feet but not less than fifty (50) feet, provided all other provisions of these rules can be met;
 - (C) Water Lines and Sewer Lines Cross. Where water lines and building or effluent sewer lines cross, separation distances shall be as required in the State Plumbing Code;
 - (D) Septic Tank Setbacks. The Agent shall encourage the placement of septic tanks and other treatment units as close as feasible to the minimum. separation from the building foundation in order to minimize clogging of the building sewer.

Amend OAR 340-71-220(6) as follows:

- (6) Dosing Tanks:
 - (a) Construction of dosing tanks shall comply with the minimum standards in OAR 340-73-025 and 340-73-050, unless otherwise authorized in writing by the Department on a case-by-case basis;
 - (b) Each dosing tank shall be installed on a stable, level base;

- (c) Each dosing tank shall be provided with at least one watertight riser and gasketed manhole cover, extending to the ground surface or above. The riser shall have a minimum nominal diameter of twenty (20) inches. Provision shall be made for securely fastening the manhole cover, unless *[the manhole cover]* it weighs at least 50 pounds;
- (d) Dosing tanks located in high groundwater areas shall be weighted or provided with an antibuoyancy device to prevent flotation.

Amend OAR 340-71-275 as follows:

340-71-275 PRESSURIZED DISTRIBUTION SYSTEMS.

- (1) Pressurized distribution systems receiving residential strength wastewater may be permitted on any site meeting the requirements for installation of a standard subsurface sewage disposal systems, or other sites where this method of effluent distribution is preferable and all the following minimum site conditions can be met.
- (2) Except as provided in OAR 340-71-220(1)(c), pressurized distribution systems shall be used where depth to soil as defined in OAR 340-71-100 (138 [139])(a) and (b) is less than thirty-six (36) inches and the minimum separation distance between the bottom of the disposal trench and soil as defined in OAR 340-71-100 (138 [139])(a) and (b) is less than eighteen (18) inches.
- Pressurized distribution systems installed in soil as defined in OAR 340-71-100(138 [139])(a) and (b) in areas with permanent water tables shall not discharge more than four hundred fifty (450) gallons of effluent per one-half (1/2) acre per day except where:
 - (a) Groundwater is degraded and designated as a non-developable resource by the State Department of Water Resources; or
 - (b) A detailed hydrogeological study discloses loading rates exceeding four hundred fifty (450) gallons per one-half (1/2) acre per day would not increase the nitrate-nitrogen concentration in the groundwater beneath the site, or at any down gradient location, above five (5) milligrams per liter.
- (4) Materials and Construction:
 - (a) General:
 - (A) All materials used in pressurized systems shall be structurally sound, durable, and capable of withstanding normal stresses incidental to installation and operation;

- (B) Nothing in these rules shall be construed to set aside applicable building, electrical, or other codes. An electrical permit and inspection from the Department of Commerce or the municipality with jurisdiction (as defined in ORS 456.750(5)) is required for pump wiring installation.
- (b) Pressurized Distribution Piping. Piping, valves and fittings for pressurized systems shall meet the following minimum requirements:
 - (A) All pressure transport, manifold, lateral piping, and fittings shall meet or exceed the requirements for PVC 1120 pressure pipe as identified in ASTM Specification D2241. For pipe diameters of one inch or less, the minimum pressure rating shall be 200 pounds per square inch (psi); for diameters greater that one inch, the minimum pressure rating shall be 160 psi;
 - (B) Pressure transport piping shall be uniformly supported along the trench bottom, and at the discretion of the Agent, it shall be bedded in sand or other material approved by the Agent. A minimum eighteen (18) gauge green jacketed tracer wire or green color coded metallic locate tape, shall be placed above piping when crossing property lines or entering public property or right of way;
 - (C) Orifices shall be located on top of the pipe, except as noted in paragraph 4(b)(I) of this section;
 - (D) The ends of lateral piping shall be constructed with long sweep elbows or equal method to bring the end of the pipe to ground level. The ends of the pipe shall be provided with threaded plugs or caps;
 - (E) All joints in the manifold, lateral piping, and fittings shall be solvent welded, using the appropriate joint compound for the pipe material.
 Pressure transport piping may be solvent welded or rubber ring jointed;
 - (F) An isolation valve shall be placed on the pressure transport pipe, in or near the dosing tank, when appropriate;
 - (G) A check valve shall be placed between the pump and the gate valve, when appropriate;
 - (H) All orifices shall be covered by a protective, durable, non-corrosive orifice shield designed to keep orifices from being blocked by drain media or other system components. The shields shall be removable for access to the orifices;

- Where conditions include but are not limited to, extended freezing temperatures, temporary or seasonal use, or effluent characteristics, the Agent may specify alternate orifice orientation, and/or valve arrangements;
- (J) Where the operation of a pump could result in siphonage of effluent to below the normal off level of the pump, an anti-siphon measure, in the form of a non-discharging valve, designed for the specific purpose, shall be used. The anti-siphon valve shall be installed and operated in accordance with manufacturer's specifications.
- (c) Disposal Trench Sizing and Construction:
 - (A) A system using disposal trenches shall be designed and sized in accordance with the requirements of OAR 340-71-220(2);
 - (B) Disposal trenches shall be constructed using the specifications for the standard disposal trench unless otherwise allowed by the Department on a case-by-case basis;
 - (C) Pressure lateral piping shall have not less than six (6) inches of drain media below, nor less than four (4) inches of drain media above the piping;
 - (D) The top of the drain media shall be covered with filter fabric, or other nondegradable material permeable to fluids that will not allow passage of soil particles coarser than very fine sand. In unstable soils, lining the sidewall may be required.
- (d) Seepage Bed Construction:
 - (A) Seepage beds may only be used in soil as defined in OAR 340-71-100 (138 [139]) (b) as an alternative to the use of disposal trenches, for flows less than or equal to 600 gallons per day;
 - (B) The effective seepage area shall be based on the bottom area of the seepage bed. The minimum area shall be determined on the basis of 200 square feet minimum per 150 gallons per day waste flow;
 - (C) Beds shall be installed not less than eighteen (18) inches (twelve (12) inches with a capping fill) nor deeper than thirty-six (36) inches into the natural soil. The seepage bed bottom shall be level;

- (D) The top of the drain media shall be covered with filter fabric, or other nondegradable material that is permeable to fluids but will not allow passage of soil particles coarser than very fine sand;
- (E) Pressurized distribution piping shall have not less than six (6) inches of drain media below, nor less than four (4) inches of drain media above the piping;
- (F) Pressurized distribution piping shall be horizontally spaced not more than four (4) feet apart, and not more than two (2) feet away from the seepage bed sidewall. At least two (2) parallel pressurized distribution pipes shall be placed in the seepage bed;
- (G) A minimum of ten (10) feet of undisturbed earth shall be maintained between seepage beds.
- (e) Notwithstanding other requirements of this rule, when the projected daily sewage flow is greater than two thousand five hundred (2,500) gallons the Department may approve other design criteria it deems appropriate.
- (5) Hydraulic Design Criteria. Pressurized distribution systems shall be designed for appropriate head and capacity:
 - (a) Head calculations shall include maximum static lift, pipe friction and orifice head requirements:
 - (A) Static lift where pumps are used shall be measured from the minimum dosing tank level to the level of the perforated distribution piping;
 - (B) Pipe friction shall be based upon a Hazen Williams coefficient of smoothness of 150. All pressure lateral piping and fittings shall have a minimum diameter of two (2) inches unless submitted plans and specifications show a smaller diameter pipe is adequate;
 - (C) There shall be a minimum head of five (5) feet at the remotest orifice and no more than a ten (10) percent flow variation between nearest and remotest orifice in an individual unit.
 - (b) The capacity of a pressurized distribution system refers to the rate of flow given in gallons per minute (gpm):
 - (A) Lateral piping shall have discharge orifices drilled a minimum diameter of one-eighth (1/8) inch, and evenly spaced at a distance not greater than twenty-four (24) inches in coarse textured soils or greater than four (4) feet in finer textured soils;

- (B) The system shall be dosed at a rate not to exceed twenty (20) percent of the projected daily sewage flow;
- (C) The effect of back drainage of the total volume of effluent within the pressure distribution system shall be evaluated for its impact upon the dosing tank and system operation.

Amend OAR 340-71-290(6) as follows:

- (6) Materials and Construction:
 - (a) All materials used in sand filter system construction shall be structurally sound, durable and capable of withstanding normal installation and operation stresses. Component parts subject to malfunction or excessive wear shall be readily accessible for repair and replacement;
 - (b) All filter containers shall be placed over a stable level base;
 - (c) In a gravity operated distribution system, <u>the invert elevation of the outlet</u> <u>end of the underdrain pipe shall be at or above the final settled ground</u> <u>elevation of the highest disposal area</u> [a vertical separation between the invert of the underdrain piping outlet and the top of the drain media in the uppermost disposal trench shall be maintained that will not allow</u> effluent to back up into the sand filter base before surfacing over the uppermost disposal trench];
 - (d) Piping and fittings for the sand filter distribution system shall be as required under pressure distribution systems, OAR 340-71-275;
 - (e) The specific requirements for septic tanks, dosing tanks, etc. are found in OAR 340-71-220;
 - (f) The requirements in OAR 340-71-295 shall be met;
 - (g) A bottomless sand filter unit does not require a minimum 10 foot separation between the original and replacement unit.

Amend OAR 340-71-290(7) as follows:

- (7) "Gravel-less [Graveless] Absorption Method"
 - (a) Following a sand filter, disposal trenches may be constructed without the use of drain media, to the following minimum criteria:

- (A) Twelve (12) inches wide by ten (10) inches deep incorporating pressurized distribution and a chamber constructed of half sections of twelve (12) inch diameter plastic irrigation pipes (PIP);
- (B) Trenches shall be level end to end and across their width;
- (C) At the discretion of the Agent, trenches may be installed on minimum three (3) foot centers maintaining at least two (2) feet of undisturbed earth between parallel trench sidewalls;
- (D) Piping shall be minimum one inch diameter PVC meeting all the requirements of these rules;
- (E) Distribution piping shall be perforated with one-eighth inch diameter orifices on maximum two foot centers at the twelve o'clock position. The hydraulic design shall provide at least two feet residual head at the distal orifice; and
- (F) The chambers shall have an adequate footing to support the soil cover and all normal activity, and at a minimum shall be constructed of twelve inch PIP rated at 43 pounds per square inch meeting the appendix standards of ASTM D-2241. Each line shall be equipped with a minimum six inch diameter inspection port.
- (b) Except as noted in subsection (a) of this section, all other construction and siting criteria including but not limited to the disposal field sizing for sand filter systems in OAR 340-71-290(4), and area to accommodate the installation of an initial and replacement absorption facility meeting standard trench separations in OAR 340-71-220(7)(a)(D), shall apply. Plans verifying that a system could be installed on the parcel that will meet the requirements in OAR 340-71-290(4) and 340-71-220(7)(a)(D) and all other applicable rules, are required before approval of this method.
- (c) This disposal field option may be used wherever a standard or alternative type disposal trench is authorized by current rules for sand filter systems, except for Vertisols.

Amend OAR 340-71-295(1) as follows:

- (1) Sewage Flows:
 - (a) Design sewage flows for a system proposed to serve a commercial facility shall be limited to twenty-five hundred (2,500) gallons or less, with a wastewater strength not to exceed that defined for residential *[waste]* strength <u>wastewater</u>, unless otherwise authorized in writing by the Department;

(b) Design sewage flows for a system proposed to serve a single family dwelling shall be in accordance with the provisions of OAR 340-71-220(2)(a).

Amend OAR 340-71-295(3) as follows:

- (3) Design Criteria:
 - (a) The interior base of the filter container shall be level or constructed at a grade of one (1) percent or less to the underdrain piping elevation;
 - (b) Except for sand filters without a bottom, underdrain piping shall be installed in the interior of the filter container at the lowest elevation. The piping shall be level or on a grade of one (1) percent or less to the point of passage through the filter container;
 - (c) The underdrain piping and bottom of the filter container <u>with the underdrain</u> <u>piping in place</u> shall be covered with a minimum of six (6) inches of drain media or underdrain media. Where underdrain media is used, the underdrain piping shall be enveloped in an amount and depth of drain media to prevent migration of the underdrain media to the pipe perforations;
 - (d) Where drain media is used at the base of the filter, it shall be covered by a layer of filter fabric meeting the specifications found in OAR 340-73-041. Where underdrain media is used, filter fabric is not required or prescribed;
 - (e) A minimum of twenty-four (24) inches of approved sand filter media shall be installed over the filter fabric or underdrain media. [Where medium sand is used, the sand] The sand filter media shall be damp at the time of installation. The top surface of the media shall be level. Unless waived by the Agent, the sand filter media proposed for each sand filter [J] shall be sieve tested to determine conformance with the criteria outlined in OAR 340-71-100(115), and the report of analysis shall be provided to the Agent [these rules. The sieve analysis shall be done in accordance with ASTM C-136, Standard Methods for Sieve Analysis of Fine and Coarse Aggregate, and in conjunction and accordance with ASTM C-117, Standard Test Method for Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing. A sieve analysis by a qualified party shall be conducted and report issued prior to each sand filter installation];
 - (f) There shall be a minimum of three (3) inches of clean drain media below the distribution laterals, and sufficient media above the laterals equal to or covering the orifice shields to provide a smooth even cover. Underdrain media may be used in lieu of drain media;

- (g) Within the zone described in subsection (f) of this section, a pressurized distribution system, meeting the requirements of OAR 340-71-275(4) and (5), shall be constructed, with the following requirements:
 - (A) Distribution laterals shall be spaced on maximum thirty (30) inch centers. Orifices shall be *[placed such that there is one orifice for each six (6) square feet of sand surface area]* spaced no more than thirty (30) inches apart;
 - (B) The distribution laterals shall have not less than three (3) inches of drain or underdrain media below the piping;
 - (C) The ends of the distribution laterals shall be designed and constructed with a means to perform flushing of the piping, collectively or individually, through the operation of a non-corrosive and accessible valve or threaded endcap. The valve or endcap must be easily accessible. The flushed effluent may be discharged to the septic tank or into the sand filter;
 - (D) The diameters of the distribution manifold and laterals shall not be less than one half (1/2) inch diameter.
 - (E) A sand filter shall be dosed at a rate not to exceed ten (10) percent of the projected daily sewage flow.
- (h) The top of the media in which the pressure distribution system is installed shall be covered with filter fabric meeting the specifications found in OAR 340-73-041;
- (i) The top of the sand filter area shall be backfilled with a soil cover, free of rock, vegetation, wood waste, etc. The soil cover shall have a textural class no finer than loam, unless otherwise authorized by the Agent. The soil cover shall have a minimum depth of six (6) inches and a maximum depth of twelve (12) inches;
- (j) The passage of all piping through the sand filter container shall be done in a watertight manner.

Amend OAR 340-71-315(2) as follows:

- (2) Construction Requirements:
 - (a) Field collection drainage tile shall be installed on a uniform grade of two-tenths to four-tenths (0.2-0.4) feet of fall per one hundred (100) feet, and either:

		(A) A minimum of thirty-six (36) inches deep in soils with temporary groundwater; or	
		(B) A minimum of sixty-six (66) inches deep in soils with permanent groundwater.	
	<u>(b)</u>	Field collection drainage tile trench shall be constructed a minimum twelve (12) inches wide.	
[(b)]	<u>(c)</u>	Maximum drainage tile spacing shall be seventy (70) feet center to center;	
[(c)]	<u>(d)</u>	Minimum horizontal separation distance between the drainage tile and absorption facility shall be twenty (20) feet;	
[(d)]	<u>(e)</u>	Field collection drainage tile shall be rigid smooth wall perforated pipe, or other approved pipe material accepted by the Agent, with a minimum diameter of four (4) inches;	
[(e)]	(f)	Field collection drainage tile shall be enveloped in clean filter material to within thirty (30) inches of the soil surface in soils with permanent groundwater, or to within twelve (12) inches of the soil surface in soils with temporary groundwater. Drain media shall be covered with filter fabric, treated building paper or other nondegradable material approved by the Agent;	
[(f)]	<u>(g)</u>	Outlet tile shall be rigid smooth wall solid PVC pipe, meeting or exceeding ASTM Standard D-3034, with a minimum diameter of four (4) inches. A flap gate or rodent guard may be required by the Agent;	
[(g)]	<u>(h)</u>	A silt trap with a twelve (12) inch minimum diameter shall be installed between the field collection drainage tile and the outlet pipe unless otherwise authorized by the Department. The bottom of the silt trap shall be a minimum twelve (12) inches below the invert of the drainage pipe outlet;	
[(h)]	<u>(i)</u>	The discharge pipe and tile drainage system are integral parts of the system, but do not need to meet setback requirements to property lines, wells, streams, lakes, ponds or other surface waterbodies;	
[(i)]	(j)	The Agent has the discretion of requiring demonstration that a proposed tile dewatering site can be drained prior to issuing a Construction-Installation permit;	
[(j)]	<u>(k)</u>	The absorption facility shall use equal or pressurized distribution.	

Amend OAR 340-71-340 as follows:

340-71-340 HOLDING TANKS.

- (1) Criteria for Approval. Except as provided in section (5) of this rule, a [A] holding tank requires a WPCF Permit. A WPCF permit for a holding tank may be authorized by the Department [Agent for holding tanks] on sites that meet all the following conditions:
 - (a) Permanent Use:
 - (A) The site cannot be approved for installation of a standard subsurface system; and
 - (B) No community or area-wide sewerage system is available or expected to be available within five (5) years; and
 - (C) The tank is intended to serve a small industrial or commercial building, or an occasional use facility such as a county fair or a rodeo; and
 - (D) Unless otherwise allowed by the Department, the projected daily sewage flow is not more than two hundred (200) gallons; and
 - (E) Setbacks as required for septic tanks can be met.
 - (b) Temporary Use: *f(A)* In an area under the control of a city or other legal entity authorized to construct, operate, and maintain a community or area-wide sewerage system, a holding tank may be installed provided the application for permit includes a copy of a legal commitment from the legal entity that within five (5) years from the date of the application the legal entity will extend to the property covered by the application a community or area-wide sewerage system meeting the requirements of the Commission, and provided further that the proposed holding tank will otherwise comply with the requirements of these rules. *[: or]*

[(B) The tank is to serve a temporary construction site.]

f(2) General:

- (a) No building may be served by more than one (1) holding tank;
- (b) A single tax lot may be served by no more than one (1) holding tank unless the holding tanks are under control of a municipality as defined in Oregon Revised Statutes;]

[(3)] (2) Design and Construction Requirements, Except as provided in section (5) of this rule, holding tanks shall comply with the following:

- (a) Plans and specifications for each holding tank proposed to be installed shall be submitted to the *[Agent]* Department for review and approval;
- (b) Each tank shall have a minimum liquid capacity of fifteen hundred (1,500) gallons;
- (c) Each tank shall:
 - (A) Comply with standards for *[septic]* tanks contained in OAR 340-73-025;
 - (B) Be located and designed to facilitate removal of contents by pumping;
 - (C) Be equipped with both an audible and visual alarm, placed in a location acceptable to the *[Agent]* <u>Department</u>, to indicate when the tank is seventy-five (75) percent full. The audible alarm only may be user cancelable;
 - (D) Have no overflow vent at an elevation lower than the overflow level of the lowest fixture served;
 - (E) Be designed for antibuoyancy if test hole examination or other observations indicate seasonally high groundwater may float the tank when empty.
- f(4) (3) Special Requirements. The application for <u>a WPCF</u> permit shall contain:
 - (a) A copy of a contract with a licensed sewage disposal service company which shows the tank will be pumped periodically, at regular intervals or as needed, and the contents disposed of in a manner and at a facility approved by the Department;
 - (b) Evidence that the owner or operator of the proposed disposal facility will accept the pumpings for treatment and disposal.
- (4) Inspection Requirements. Each holding tank <u>regulated through a WPCF</u>.
 <u>permit</u> may be inspected <u>fannually</u> <u>periodically</u>. An annual compliance determination fee in accordance with the fee schedule in OAR 340-71-140 shall be charged.

- (5) Portable holding tanks may be temporarily placed at sites having limited duration events (such as but not limited to county fairs or construction projects), provided the following requirements are met:
 - (a) They shall be owned and serviced by a licensed sewage disposal service business with sewage pumping equipment having not less than a 550 gallon tank, while also meeting all other requirements in OAR 340-71-600(10);
 - (b) Tank placement and use shall be in compliance with all local planning, building, and health requirements;
 - (c) Only domestic sewage shall be discharged into the tank. Industrial wastewater, and wastewater containing heavy metals (including but not limited to copper, cadmium and zinc) shall not be discharged into the tank;
 - (d) The tank shall be maintained in a sanitary manner so as not to cause a health hazard or nuisance;
 - (e) The tank shall not be buried;
 - (f) Use of this tank to serve a dwelling, recreation vehicle, or any other structure having sleeping accommodations is strictly prohibited. Notwithstanding this prohibition, a portable holding tank may be used temporarily to serve a contractor's job shack or night watchman's trailer:
 - (g) The tank shall meet the following standards:
 - (A) The tank shall be water-tight, with no overflow vent lower than the overflow level of the lowest fixture served;
 - (B) Tank capacity shall not exceed 1,000 gallons unless otherwise authorized by the agent;
 - (C) The tank shall be structurally sound, and be made of durable non-corrosive materials;
 - (D) The tank shall be designed and constructed to provide a secure and water-tight connection of the building sewer pipe.
 - (E) The tank shall be marked with the name and phone number of the licensed sewage disposal service responsible for maintaining the tank.

Amend OAR 340-71-425 as follows:

340-71-425 VARIANCE OFFICERS.

- (1) To qualify for appointment as a *[special]* variance officer, *[after the effective date of these rules]* an individual must:
 - (a) Have *[three-(3)]* the equivalent of five (5) years full time experience in subsurface sewage disposal methods since January 1, 1974; *[one (1)]* three (3) years of which shall have been in Oregon; and
 - (b) Have attended one (1) or more seminars, workshops, or short courses pertaining soils and their relationship to subsurface sewage disposal.
- (2) Agreement (contract) counties may request that a county staff member, meeting the above qualifications, be appointed *[special]* as a variance officer. That staff member, if appointed, would perform the Department's variance duties within that county.

Amend OAR 340-71-440 as follows:

340-71-440 VARIANCE APPEALS. [Decisions of] <u>A</u> variance [officers] officer's decision to grant [or deny] a variance may be appealed to the Commission.

Amend OAR 340-71-500 as follows:

340-71-500 COMMUNITY SYSTEMS.

- (1) Without first applying for and obtaining a construction-installation permit, no person shall install a community on-site system.
- [(2) Proposed community-systems with projected sewage flows greater than two thousand five hundred (2,500) gallons per day-shall have a WPCF permit prior to construction and shall have plans reviewed and approved by the Department prior to construction , unless that responsibility is specifically delegated to the Agent.]
- f(3) (2) Plans for all community systems shall include operation and maintenance details including details for financing system operation and maintenance.
- **f(4)** (3) The site criteria for approval of community systems shall be the same as required for standard subsurface systems contained in OAR 340-71-220 (1), or in the case of community alternative systems, the specific site conditions for that system contained in rules: OAR 340-71-260 through 340-71-275; OAR 340-71-290 through 340-71-305; OAR 340-71-315; and 340-71-345.

- [(5)] (4) Operation Responsibility:
 - (a) Responsibility for operation and maintenance of community systems shall be vested in a municipality, a Homeowners Association, or an Association of Unit Owners as defined in Oregon Revised Statutes;
 - (b) Unless otherwise required by permit, community systems shall be inspected at least annually by the responsible entity.

Amend OAR 340-71-520 as follows:

340-71-520 LARGE SYSTEM_[S] SPECIAL DESIGN REQUIREMENTS.

- [(1) Large systems require a WPCF permit. The Agent may authorize construction of a large system provided the following design criteria are met.]
- **[(2)** Special Design Requirements:] Unless otherwise authorized by the Department, large systems shall comply with the following requirements:
- f(a) (1) Large system absorption facilities shall be designed with distribution to the cells by means of pump(s) or siphon(s);
- (b) (2) The disposal area shall be divided into relatively equal units. Each unit shall receive no more than thirteen hundred (1300) gallons of effluent per day;
- **f(c)** (3) The replacement (repair) disposal area shall be divided into relatively equal units, with a replacement disposal area unit located adjacent to an initial disposal area unit;
- f(d) Effluent distribution shall alternate between the disposal area units;
- f(e) Each system shall have at least two (2) pumps or siphons;
- **f(f)** (6) The applicant shall provide a written assessment of the impact of the proposed system upon the quality of public waters and public health, prepared by a registered geologist or certified engineering geologist qualified as a hydrogeologist, or a subordinate under the direction of either, except as specifically exempted in ORS 672.535.
 - F(3) Plans and specifications for large systems shall be prepared by any competent professional with education or experience in the specific technical field involved. The professional may accept an assignment requiring education or experience outside of his/her own field of competence provided he/she retains competent and legally qualified services to perform that part of the assignment outside his/her own field of competence, his/her client or employer approves this procedure, and he/she retains

responsibility to his/her client or employer for the competent performance of the whole assignment.]

[(4) Construction Requirements:

- (a) Construction shall be in substantial conformance with approved plans and specifications and any terms of the permit issued by the Agent;
- (b) After completion of the system the professional shall certify that the system was installed in accordance with approved plans and specifications.]

Amend OAR 340-71-600 as follows:

340-71-600 SEWAGE DISPOSAL SERVICE

- (1)No person shall perform sewage disposal services or advertise or represent himself/herself as being in the business of performing such services without first obtaining a **business** license from the Department. Unless suspended or revoked at an earlier date, a Sewage Disposal Service business license issued pursuant to this rule expires on July 1 next following the date of issuance. Beginning [July 1 1996] January 1, 2000, in order to be licensed, the applicant for a license with an installer endorsement must provide evidence that at least one individual working for the business has passed a written examination to demonstrate [familiarization with] a minimally adequate knowledge of the on-site rules found in OAR Chapter 340, Divisions 71 and 73 *I, or attend a Department approved training session*]. In addition, the person at the job-site who supervises or is responsible for [All persons employed by the licensee who are involved in] the construction or installation of the system [systems] shall also pass the written test for attend the training session and shall carry evidence of that on their person]. The Department will provide all persons [,] who pass the test for attend the training session] with a wallet size card for this purpose. People required to be certified shall be able to readily produce evidence of certification when asked to do so by the Agent. [Retesting will be] Re-certification is required every five (5) years, and may be accomplished by attending pertinent training sessions, workshops, or through other methods acceptable to the Department .
- (2) <u>Two types of license endorsements may be issued:</u>
 - (a) Installer. Businesses licensed with this endorsement may construct or install on-site systems or parts of on-site systems, and/or do the grading, excavating, and earth-moving work associated with the construction or installation of onsite systems;

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- (b) Pumper. Businesses licensed with this endorsement may pump out and clean on-site sewage disposal systems, portable toilets, or any part thereof, and dispose of the material derived from the pumping out or cleaning of on-site systems and portable toilets.
- [(2)] (3) Those persons making application for a sewage disposal service <u>business</u> license shall:
 - (a) Submit a complete license application form to the Department for each business; and
 - (b) File and maintain with the Department original evidence of surety bond, or other approved equivalent security, in the penal sum of two thousand five hundred dollars (\$2,500) for each business; and
 - (c) Shall have pumping equipment inspected by the Agent annually if intending to pump out or clean systems and shall complete the "Sewage Pumping Equipment Description/Inspection" form supplied by the Department. An inspection performed after January 1st shall be accepted for licensing the following July 1st; and
 - (d) Submit the appropriate fee as set forth in subsection 340-71-140(1)(h) for each business; and
 - (e) [Pass the written examination or have attended a Department approved training session] Except as provided in section (1) of this rule, furnish evidence that at least one individual working for the business has passed a written examination to demonstrate a minimally adequate knowledge of the on-site rules found in OAR Chapter 340, Divisions 71 and 73; and
 - (f) If operating a septage pumping service, submit -*[a copy of the past 12 months pumping records required by subsection (12)(d) of this rule]* <u>summary origin-destination pumping information on a form supplied by the Department.</u>
- **(4)** A Sewage Disposal Service <u>business</u> license may be transferred or amended during the license period to reflect changes in business name, ownership, or entity (i.e., individual, partnership, or corporation), providing:
 - (a) A complete application to transfer or amend the license is submitted to the Department with the appropriate fee as set forth in OAR 340-71-140(1)(h); and
 - (b) The Department is provided with a rider to the surety, or a new form of security as required in subsection $(\underline{[2]}3)(b)$ of this rule; and
 - (c) A valid Sewage Disposal Service **business** license (not suspended, revoked, or expired) is returned to the Department; and

- (d) If there is a change in the business name, a new ``Sewage Pumping Equipment Description/Inspection'' form for each vehicle is submitted to the Department ; and
- (e) No person who takes over a Sewage Disposal Service <u>business</u> shall operate the business until [they have] evidence is provided to the Department that at least one individual working for the business has passed the written examination described in section (1) of this rule. for attended the Department approved training session.] Businesses that have only the pumper endorsement described in sub-section (2)(b) of this rule are exempt from this requirement.
- [(4)] (5) The type of security to be furnished pursuant to OAR 340-71-600([2] 3)(b) may be:
 - (a) Surety bond executed in favor of the State of Oregon on a form approved by the Attorney General and provided by the Department. The bond shall be issued by a surety company licensed by the Insurance Commissioner of Oregon. Any surety bond shall be so conditioned that it may be canceled only after forty-five (45) days notice to the Department, and to otherwise remain in effect for not less than two (2) years following termination of the sewage disposal service license, except as provided in subsection (e) of this section; or
 - (b) Insured savings account irrevocably assigned to the Department, with interest earned by such account made payable to the depositor; or
 - (c) Negotiable securities of a character approved by the State Treasurer, irrevocably assigned to the Department, with interest earned on deposited securities made payable to the depositor;
 - (d) Any deposit of cash or negotiable securities under ORS 454.705 shall remain in effect for not less than two (2) years following termination of the sewage disposal service license except as provided in subsection (e) of this section. A claim against such security deposits must be submitted in writing to the Department, together with an authenticated copy of:
 - (A) The court judgment or order requiring payment of the claim; or
 - (B) Written authority by the depositor for the Department to pay the claim.
 - (e) When proceedings under ORS 454.705 have been commenced while the security required is in effect, such security shall be held until final disposition of the proceedings is made. At that time claims will be referred for consideration of payment from the security so held.

- [(5)] (6) Each licensee shall:
 - (a) Be responsible for any violation of any statute, rule, or order of the Commission or Department pertaining to his licensed business;
 - (b) Be responsible for any act or omission of any servant, agent, employee, or representative of such licensee in violation of any statute, rule, or order pertaining to his license privileges;
 - (c) Deliver to each person for whom he performs services requiring such license, prior to completion of services, a written notice which contains:
 - (A) A list of rights of the recipient of such services which are contained in ORS 454.705(2); and
 - (B) Name and address of the surety company which has executed the bond required by ORS 454.705(1); or
 - (C) A statement that the licensee has deposited cash or negotiable securities for the benefit of the Department in compensating any person injured by failure of the licensee to comply with ORS 454.605 to 454.745 and with rules of the Environmental Quality Commission.
 - (d) Keep the Department informed on company changes that affect the license, such as business name change, change from individual to partnership, change from partnership to corporation, change in ownership, etc.
- [(6)] (7) Misuse of License:
 - (a) No *[licensee]* sewage disposal service business shall *[permit]* allow anyone to perform sewage disposal services *[operate]* under its *[his]* license, except a person who is working [under supervision of the licensee] as an employee of the business;
 - (b) No<u>business</u> [*person*] shall:
 - (A) Display or cause or permit to be displayed, or have in [*His*] its possession any license, knowing it to be fictitious, revoked, suspended or fraudulently altered;
 - (B) Fail or refuse to surrender to the Department any license which has been suspended or revoked;
 - (C) Give false or fictitious information or knowingly conceal a material fact or otherwise commit a fraud in any license application.

- [(7)] (8) Pumping and Cleaning Responsibilities:
 - (a) **[Persons]** Businesses performing the service of pumping or cleaning of sewage disposal facilities shall avoid spilling of sewage while pumping or while in transport for disposal.
 - (b) Any spillage of sewage shall be immediately cleaned up by the operator and the spill area shall be disinfected.
- [(8)] (9) License Suspension or Revocation:
 - (a) The Department may suspend, revoke, or refuse to grant, or refuse to renew, any sewage disposal service license if it finds:
 - (A) A material misrepresentation or false statement in connection with a license application; or
 - (B) Failure to comply with any provisions of ORS 454.605 through 454.785, the rules of the Environmental Quality Commission or an order of the Commission or Department; or
 - (C) Failure to maintain in effect at all times the required bond or other approved equivalent security, in the full amount specified in ORS 454.705; or
 - (D) Nonpayment by drawee of any instrument tendered by applicant as payment of license fee.
 - (b) Whenever a license is suspended, revoked or expires, the *[licensee]* business shall remove the license from display and remove all Department identifying labels from equipment. The *[licensee]* business shall surrender the suspended or revoked license, and certify in writing to the Department within fourteen (14) days after suspension or revocation that all Department identification labels have been removed from all equipment;
 - (c) A sewage disposal service **business** may not be considered for re-licensure for a period of at least one (1) year after revocation of its license;
 - (d) A suspended license may be reinstated, providing:
 - (A) A complete application for reinstatement of license is submitted to the Department, accompanied by the appropriate fee as set forth in OAR 340-71-140(1)(h); and
 - (B) The grounds for suspension have been corrected; and

- (C) The original license would not have otherwise expired.
- (9)] (10) Equipment Minimum Specifications:
 - (a) Tanks for pumping out of sewage disposal facilities shall comply with the following:
 - (A) Have a liquid capacity of at least five hundred fifty (550) gallons.

EXCEPTION: Tanks for equipment used exclusively for pumping chemical toilets not exceeding <u>eighty (80)</u> [*fifty* (50)] gallons capacity, shall have a liquid capacity of at least one hundred fifty (150) gallons.

- (B) Be of watertight metal construction;
- (C) Be fully enclosed;
- (D) Have suitable covers to prevent spillage.
- (b) The vehicle shall be equipped with either a vacuum or other type pump which will not allow seepage from the diaphragm or other packing glands and which is self priming;
- (c) The sewage hose on vehicles shall be drained, capped, and stored in a manner that will not create a public health hazard or nuisance;
- (d) The discharge nozzle shall be:
 - (A) Provided with either a camlock quick coupling or threaded screw cap;
 - (B) Sealed by threaded cap or quick coupling when not in use;
 - (C) Located so that there is no flow or drip onto any portion of the vehicle;
 - (D) Protected from accidental damage or breakage.
- (e) No pumping equipment shall have spreader gates;
- (f) Each vehicle shall at all times be supplied with a pressurized wash water tank, disinfectant, and implements for cleanup;
- (g) Pumping equipment shall be used for pumping sewage disposal facilities exclusively unless otherwise authorized in writing by the Agent;

- (h) Chemical toilet **<u>pumping</u>** [*eleaning*] equipment shall not be used for any other purpose **<u>if</u>** the pump tank has a liquid capacity of less than 550 gallons</u>.
- [(10)] (11) Equipment Operation and Maintenance:
 - (a) When in use, pumping equipment shall be operated in a manner so as not to create public health hazards or nuisances;
 - (b) Equipment shall be maintained in a reasonably clean condition at all times.
- [(11)] (12) Vehicles shall be identified as follows:
 - (a) Display the name or assumed business name on each vehicle cab and on each side of a tank trailer:
 - (A) In letters at least three (3) inches in height; and
 - (B) In a color contrasting with the background.
 - (b) Tank capacity shall be printed on both sides of the tank:
 - (A) In letters at least three (3) inches in height; and
 - (B) In a color contrasting with the background.
 - (c) Labels issued by the Department for each current license period shall be displayed at all times at the front, rear, and on each side of the "motor vehicle" as defined by United States Department of Transportation Regulations, Title 49 U.S.C.
- [(12)] (13) Disposal of Septage. Each [licensee] business shall:
 - (a) Discharge no septage upon the surface of the ground unless approved by the Department in writing;
 - (b) Dispose of septage only in disposal facilities approved by the Department;
 - (c) Possess at all times during pumping, transport or disposal of septage, origin-destination records for sewage disposal services rendered;
 - (d) Maintain on file, for not less than three (3) years, complete origin-destination records for sewage disposal services rendered. The records must be made available for review upon the request of the Department. Origin-Destination records shall include:
 - (A) Source of septage on each occurrence, including name and address;

- (B) Specific type of material pumped on each occurrence;
- (C) Quantity of material pumped on each occurrence;
- (D) Name and location of authorized disposal site, where septage was deposited on each occurrence;
- (E) Quantity of material deposited on each occurrence.
- (e) Transport septage in a manner that will not create a public health hazard or nuisance;
- (f) Possess a current septage management plan, approved by the Department. The plan shall be kept current, with any revisions approved by the Department before implementation;
- (g) Comply with the approved septage management plan, and the septage management plan approval letter issued by the Department.

Amend OAR 340-71-605 as follows:

4340-71-605-IMPLEMENTATION DATE OF RULE-MODIFICATIONS.]

[OAR 340-71-115 and 340-71-130(2) become effective immediately upon filing with the Secretary of State. OAR 340-71-140(6) takes effect on October 7, 1994. Unless otherwise specified in the individual rule, all other rule modifications become effective April 1, 1995. Until these rule modifications become rules remain in effect.]

Amend OAR 340-73-055(4) as follows:

- (4) Pumps, Siphons, Controls, and Alarms: All pumps, siphons, controls and related apparatus shall be field tested under working conditions and found to operate and perform satisfactorily in order to be considered in compliance with these rules. Electrical components used in on-site sewage disposal systems shall comply with State of Oregon Electrical Code, and the following provisions:
 - (a) Motors shall be continuous-duty, with overload protection;
 - (b) Pumps shall have durable impellers of bronze, cast iron, or other materials approved by the Department;
 - (c) Submersible pumps shall be provided with an easy, readily accessible means of electrical and plumbing disconnect, and a noncorrosive lifting device as a means of removal for servicing;

- (d) Except where specifically authorized in writing by the Agent, the pump or siphon shall be placed within a corrosion-resistant screen that extends above the maximum effluent level within the pump chamber. The screen shall have at least twelve (12) square feet of surface area, with one-eighth (1/8) inch openings. In lieu of the screen, the Agent may allow other methods with equal or better performance in preventing the passage of suspended solids to the pump or siphon *[The use of a screen is not required if the dosing assembly is preceded by a tank with an effluent filter]*;
- (e) Pumps shall be automatically controlled by float switches with a minimum rating of twelve (12) amps at one hundred fifteen (115) volts A.C. or by a Department approved equivalently reliable switching mechanism. Except as otherwise required in this division, the *-{The}* switches shall be installed so that no more than twenty (20) percent of the projected daily sewage flow is discharged each cycle *{,-unless otherwise authorized by the Agent}*. The pump ``off'' level shall be set to maintain the liquid level above the top of the pump or to the pump manufacturer's specifications;
- (f) An audible and visual high water level alarm with manual silence switch shall be located in or near the building served by the pump. The audible alarm only may be user cancelable. The switching mechanism <u>within a dosing tank or</u> <u>chamber</u> controlling the high water level alarm shall be located so that at time of activation the tank has one-third (1/3) of its capacity remaining for effluent storage. Commercial applications <u>utilizing duplex pumps are not subject to</u> <u>the 1/3 storage reserve capacity requirement [shall provide at-least 6 hours</u> <u>of reserve storage capacity based on projected daily flows]</u>;
- (g) When a system has more than one (1) pump, the Department may require they be wired into the electrical control panel to function alternately after each pumping cycle. If either pump should fail the other pump will continue to function, while an audible (user cancelable) and visual alarm (not user cancelable) indicating pump malfunction will activate. A cycle counter shall be installed in the electrical control panel for each pump;
- (h) All pump installations shall be designed with adequate sludge storage area below the effluent intake level of the pump;
- (i) All commercial systems with a design flow greater than 600 gallons shall be constructed in duplex (two or more alternating pumps) unless otherwise authorized in writing by the Department. Controls shall be provided such that an alarm shall signal when one (1) of the pumps malfunctions;
- (j) All pumps serving commercial systems shall be operated through a premanufactured electrical control panel. Means of monitoring pump performance through the use of elapsed time meters and cycle counters are required;

(k) Where multiple pumps are operated in series, an electrical control panel shall be installed which will prevent the operation of a pump or pumps preceding a station which experiences a high level alarm event.

Amend OAR 340-73-090 as follows:

[340-73-090 IMPLEMENTATION DATE.]

[These rules become effective April-1, 1995. Until-these rules become effective, existing rules remain in effect. Nothing in this Section is intended to prevent the Department from taking any action necessary to prepare for implementing the new rules.]

NOTICE OF PROPOSED RULEMAKING HEARING

Department of Environmental Quality

OAR Chapter 340-71 & 73

LOCATION:

DATE:

April 22, 1997

10 am

TIME:

Department of Environmental Quality Northwest Region Office 2020 SW 4th Avenue, #400, Conference Rooms A & B Portland, OR 97201-5884

HEARINGS OFFICER(s):

Martin Loring

STATUTORY AUTHORITY:

ORS 454.625 & ORS 454.745

or OTHER AUTHORITY: STATUTES IMPLEMENTED:

ADOPT:

AMEND	OAR 340-71-100	•
	OAR 340-71-120	
	OAR 340-71-130	
	OAR 340-71-140	
	OAR 340-71-162	
	OAR 340-71-205	
· •	OAR 340-71-220	
	OAR 340-71-275	
	OAR 340-71-290	
	OAR 340-71-295	
	OAR 340-71-315	
•	OAR 340-71-340	
	OAR 340-71-425	
•	OAR 340-71-440	
	OAR 340-71-500	
• . •	OAR 340-71-520	
	OAR 340-71-600	•
	OAR 340-73-055	
	<i>.</i> 0	
EPEAL:	OAR 340-71-605	

REPEAL:

OAR 340-73-090

RENUMBER:

(prior approval from Secretary of State REQUIRED)

AMEND & RENUMBER:

(prior approval from Secretary of State REQUIRED)

- This hearing notice is the initial notice given for this rulemaking action.
 - This hearing was requested by interested persons after a previous rulemaking notice.
 - Auxiliary aids for persons with disabilities are available upon advance request.

SUMMARY:

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This proposal makes substantive changes relative to licensing requirements for businesses providing onsite services to the general public, siting criteria for disposal trenches following sand filters, temporary holdong tanks, and appeal procedures for variance denials. Sixteen housekeeping changes are also included in this rule package, fourteen in Division 71 and two in Division 73.

LAST DATE FOR COMMENT: April 25, 1997

AGENCY RULES COORDINATOR: AGENCY CONTACT FOR THIS PROPOSAL: ADDRESS: Susan M. Greco, (503) 229-5213 Dewey Darold 811 S. W. 6th Avenue Portland, Oregon 97204 (503) 229-5189/1-800-452-4011

TELEPHONE:

Interested persons may comment on the proposed rules orally or in writing at the hearing. Written comments will also be considered if received by the date indicated above.

Signature

ATTACHMENT B - 2

State of Oregon DEPARTMENT OF ENVIRONMENTAL QUALITY

Rulemaking Proposal

for

Amendments to the On-site Sewage Disposal Rules-

Fiscal and Economic Impact Statement

Introduction

This rulemaking proposal has a small, but beneficial economic impact. Most rulemakings impose more stringent requirements which generally increase cost. Nothing in this proposed rulemaking increases regulatory stringency. In fact, all of the changes either reduce regulatory stringency or are neutral. Some changes will save the regulated community money. Changes to the certification requirement will not save money, but they will prevent severe economic hardship that would result from small businesses being forced out of business for failing to comply with certification requirements.

General Public

Members of the general public who have requested a variance to the On-site rules and been denied, will experience an increase in the cost of appealing that denial. Currently, there are no fees or other administrative costs associated with an appeal of a denial to the Environmental Quality Commission (EQC), and there is no requirement that an appellant be represented by counsel. Appeals of denials to circuit court will likely be more expensive. The Department has processed about 45 variance applications per year. Of these, about 5 to 10 decisions to deny the variance request are appealed.

<u>Small Business</u>

Many of the approximately 1,100 small businesses that apply for On-site Sewage Disposal licenses each year will experience a beneficial fiscal and economic impact from approval of this rule amendment. If the current rule were implemented for the renewal period beginning July 1, 1997, many (perhaps even hundreds) of existing small businesses could be forced out of the on-site business and suffer economic distress. That is, fewer than 600 individuals have passed the certification test to date, and it is highly unlikely that all of the (estimated) 4,000 people subject to the current requirement would be able to comply in time to be relicensed. Pumpers will also benefit from a cost savings in terms of the photocopying and postage that would be required to mail all origin and destination records.

Large Business

Adoption of the proposed rule amendments has no discernible effect on large business.

<u>Local Governments</u>

Adoption of the proposed rule amendments has no discernible effect on local governments.

State Agencies

- DEQ

- FTE's = 0
- Revenues = \$0
- Expenses = \$100,000 in Departmental expenses will be avoided during the 1997-99 biennium by delaying the certification deadline and narrowing its applicability.

- Other Agencies

No discernible effect on other agencies.

<u>Assumptions</u>

It is assumed that a significant number of persons holding On-site Sewage Disposal licenses will be unable to pass the Department's test on the rules in time to renew their license for the period July 1, 1997 through June 30, 1998. Because relatively few tests have been held relative to the total number of people subject to the requirement, and because tests have not been held in all parts of the state, some licensees may argue that they have been denied reasonable notice and opportunity to comply with the rule. Each of the licensees that the Department refuses to renew (because they have not complied with the certification requirement) is entitled to a contested case hearing. The many hearing requests would impose severe strain on resources of both Department and the Commission.

Housing Cost Impact Statement

The Department has determined that this proposed rulemaking will have no direct effect on the cost of development of a 6,000 square foot parcel and the construction of a 1,200 square foot detached single family dwelling on that parcel.

If it has any effect, it would be indirect and beneficial. That is, if significant numbers of installers and pumpers were put out of business due to their failure to meet certification requirements, economic theory suggests that increased competition for the services of remaining providers may have the effect of driving up prices.

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Attachment B, Page 5

ATTACHMENT B - 3

State of Oregon DEPARTMENT OF ENVIRONMENTAL QUALITY

Rulemaking Proposal for Amendments to the On-site Sewage Disposal Rules

Land Use Evaluation Statement

1. Explain the purpose of the proposed rules.

Divisions 71 and 73 of Chapter 340 of the Oregon Administrative Rules establish requirements necessary to implement the On-site Sewage Disposal Program created by ORS 454.605 - 454.745. These rules cover the siting, design, construction, installation, maintenance and operation of systems used to treat human waste where community sewer systems are not available. The rules prescribe what is necessary to ensure that use of these systems does not adversely affect public health, groundwater quality and surface water quality.

Amendments are proposed to Divisions 71 and 73 to fix problems identified in the rules. Four substantive and one procedural change are proposed to be made in Division 71. In addition, a number of housekeeping changes are proposed: Seventeen to Division 71 and two to 73.

2. Do the proposed rules affect existing rules, programs or activities that are considered land use programs in the DEQ State Agency Coordination (SAC) Program?

Yes <u>X</u> No____

a. If yes, identify existing program/rule/activity:

The issuance of an on-site sewage disposal permit is currently identified as a DEQ program activity that affects land use OAR 340-18-0030(5)(d).

b. If yes, do the existing statewide goal compliance and local plan compatibility procedures adequately cover the proposed rules?

Yes X_No_(if no, explain):

Neither Departmental staff nor county agents issue on-site permits until a land use compatibility statement has been issued for the site documenting the suitability of the site for the intended development.

c. If no, apply the following criteria to the proposed rules.

Not applicable

In the space below, state if the proposed rules are considered programs affecting land use. State the criteria and reasons for the determination.

Not applicable

3. If the proposed rules have been determined a land use program under 2. above, but are not subject to existing land use compliance and compatibility procedures, explain the new procedures the Department will use to ensure compliance and compatibility.

Stephanie Hallock, Interim Administrator Water Quality Division

Roberta Young, Intergovernmental Coordinator

State of Oregon DEPARTMENT OF ENVIRONMENTAL QUALITY

Rulemaking Proposal

.for

Proposed Adoption of Admendments to the On-Site Sewage Disposal Rules

Questions to be Answered to Reveal Potential Justification for Differing from Federal Requirements.

1. Are there federal requirements that are applicable to this situation? If so, exactly what are they?

Yes. The Safe Drinking Water Act (SDWA) requires that sources of drinking water be protected from pollution including groundwater aquifers and surface water sources.

2. Are the applicable federal requirements performance based, technology based, or both with the most stringent controlling?

Performance based.

3. Do the applicable federal requirements specifically address the issues that are of concern in Oregon? Was data or information that would reasonably reflect Oregon's concern and situation considered in the federal process that established the federal requirements?

The Safe Drinking Water Act requires that if a drinking water source becomes contaminated, it must be cleaned up.

4. Will the proposed requirement improve the ability of the regulated community to comply in a more cost effective way by clarifying confusing or potentially conflicting requirements (within or cross-media), increasing certainty, or preventing or reducing the need for costly retrofit to meet more stringent requirements later?

Not applicable.

5. Is there a timing issue which might justify changing the time frame for implementation of federal requirements?

No.

6. Will the proposed requirement assist in establishing and maintaining a reasonable margin for accommodation of uncertainty and future growth?

Yes.

7. Does the proposed requirement establish or maintain reasonable equity in the requirements for various sources? (level the playing field)

8. Would others face increased costs if a more stringent rule is not enacted?

This action imposes a less stringent rule to avoid the imposition of significant costs on some of the regulated community.

9. Does the proposed requirement include procedural requirements, reporting or monitoring requirements that are different from applicable federal requirements? If so, Why? What is the "compelling reason" for different procedural, reporting or monitoring requirements?

Not applicable. There are no federal reporting or monitoring requirements in this area.

10. Is demonstrated technology available to comply with the proposed requirement?

Yes.

11. Will the proposed requirement contribute to the prevention of pollution or address a potential problem and represent a more cost effective environmental gain?

Yes.

ATTACHMENT B - 5

State of Oregon Department of Environmental Quality

Memorandum

Date:	March 25, 1997
To:	Interested and Affected Public
Subject:	Rulemaking Proposal - On-site sewage disposal program rule amendments for the Department of Environmental Quality.

This memorandum contains information on a proposal by the Department of Environmental Quality (Department) to adopt rule amendments affecting the Department's on-site sewage disposal program. Pursuant to ORS 183.335, this memorandum also provides information about the Environmental Quality Commission's intended action to adopt a rule. This proposal makes substantive changes relative to licensing requirements for businesses providing on-site services to the general public, siting criteria for disposal trenches following sand filters, temporary holding tanks, and appeal procedures for variance denials. Sixteen housekeeping changes are also included in this rule amendment package, fourteen in Division 71 and two in Division 73.

All of these rule amendments have been developed and are recommend by a 12 person Technical Advisory Committee composed of experts in various aspects of the on-site program. The Department's technical staff involved in the committee process also support the committee recommendations. The Department has the statutory authority to address this issue under ORS 454.625 and ORS 468.020.

What's in this Package?

Attachments to this memorandum provide details on the proposal as follows:

Attachment A The official statement describing the fiscal and economic impact of the proposed rule. (required by ORS 183.335)

- Attachment B A statement providing assurance that the proposed rules are consistent with statewide land use goals and compatible with local land use plans.
- Attachment C Questions to be answered to Reveal Potential Justification for Differing from Federal Requirements.

Attachment D The actual language of the proposed rule. (amendments)

Note: Because of the length of this rule package (about 56 pages), the entire package is not being provided in this mailing. However, copies are available, upon request and will be available for viewing at DEQ field offices and contract county offices. Memo To: Interested and Affected Public Amendments to the On-Site Sewage Disposal Rules Page 2

Hearing Process Details

The Department is conducting a public hearing at which comments will be accepted orally or in writing. The hearing will be held as follows:

Date: April 22, 1997
Time: 10 am
Place: DEQ Northwest Region Office Conference Rooms A & B, 4th Floor 2020 SW 4th Avenue, #400 Portland, OR 97201-5884

Deadline for submittal of written comments: April 25, 1997

Martin Loring will be the Presiding Officer at this hearing.

Written comments can be presented at the hearing or to the Department any time prior to the date above. Comments should be sent to the Department of Environmental Quality, Community Assistance Section, Attn: Dewey W. Darold, R.S., 811 S.W. 6th Avenue, Portland, Oregon, 97204 or hand deliver to the Department of Environmental Quality, 811 S.W. 6th Avenue, 6th Floor between 8:00 a.m. and 5:00 p.m.

In accordance with ORS 183.335(13), no comments from any party can be accepted after the deadline for submission of comments has passed. Thus if you wish for your comments to be considered by the Department in the development of these rules, your comments must be received prior to the close of the comment period. The Department recommends that comments are submitted as early as possible to allow adequate review and evaluation of the comments submitted.

What Happens After the Public Comment Period Closes

Following close of the public comment period, the Presiding Officer will prepare a report which summarizes the oral testimony presented and identifies written comments submitted. The Environmental Quality Commission (EQC) will receive a copy of the Presiding Officer's report. The public hearing will be taped recorded, but the tape will not be transcribed.

The Department will review and evaluate the rulemaking proposal in light of all information received during the comment period. Following the review, the rules may be presented to the EQC as originally proposed or with modifications made in response to the public comments received.

Memo: To Interested and Affected Public Amendments to the On-Site Sewage Disposal Rules Page 3

The EQC will consider the Department's recommendations for rule adoption during one of their regularly-scheduled public meetings. The target meeting date for consideration of this rulemaking proposal is June 5-6, 1997. This date may be delayed if needed to provide additional time for evaluation and response to testimony received in the hearing process.

You will be notified of the time and place for final EQC action if you present oral testimony at the hearing or submit written comment during the comment period. Otherwise, if you wish to be kept advised of this proceeding, you should request that your name be placed on the mailing list.

Background on Development of the Rulemaking Proposal

Why is there a need for the rule?

The on-site rules need to be amended to change a requirement that the Department does not have the resources to adequately implement and enforce. This rule amendment package also incorporates substantive changes to rules affecting the siting of disposal trenches for sand filters effluent, regulation of temporary holding tanks, and appeals of variance denials. A total of 16 housekeeping changes are also included in this package (fourteen in Division 71 and two in Division 73).

In October of 1994, the Commission amended the part of the rules governing licensing of on-site sewage disposal businesses. Beginning July 1, 1996, each applicant must pass a written examination regarding the on-site sewage disposal rules, or attend a Department approved training session. This requirement extended to septic tank pumping business, business which place and service portable restroom facilities, and employees of installers who engage in the construction or installation of on-site systems. As the deadline approached, it became increasingly clear that many people would not be provided with reasonable notice and an opportunity to comply with this rule requirement if they can not meet the certification requirements, the license will not be renewed, and the business will not be able to pursue it's livelihood. The Department also found it difficult to implement the requirement with existing resources and staff.

As a result, the Commission adopted a temporary rule in July of 1996 delaying the certification deadline until January 1, 1997 and narrowing the scope of the licensing requirements to only those persons at the job site who supervise or are responsible for the construction or installation of on-site systems. The temporary rule has now expired.

The substantive change in OAR 340-71-290(3) relates to disposal trenches following sand filters. This proposed rule change provides for less restrictive siting requirements. The current rule is unclear and has been difficult to interpret by DEQ and County Agents. The rule amendment would clarify this portion of the rule by allowing disposal trenches following sand filters to be installed a maximum six inches into temporary ground water table.

Attachment B. Page 12

Memo To: Interested and Affected Public Amendments to the On-Site Sewage Disposal Rules Page 4

Temporary holding tanks are used in Oregon for limited duration events such as construction sites, fairs and other short lived events. These tanks serve a purpose where sewers are not available and there is a need for flush tollets and hand washing facilities. These tanks have been in use for about 10 years when OSHA mandated their availability at sites where the construction project cost more than \$500,000. The portable toilet industry responded to this need, and may have as many as 1,000 tanks in use. DEQ regulation is just now catching up. Current rule requires each of these facilities to have a WPCF permit, but this requirement has been observed strictly in the breach. Since the portable toilet industry has been able to operate these facilities successfully for a long time without causing any known public health or environmental problems, it is proposed to exempt portable holding tanks from the requirement to obtain a permit as long as they are owned and operated by a licensed OSSD business and they meet other requirements.

A procedural change is proposed in the way that appeals of variances denials are handled. The current rule directs that both (third party) appeals of variance approvals, and appeals of variance denials go to the Environmental Quality Commission (EQC). A review of the legislative history by the Department of Justice revealed that this rule does not follow the legislative intent. In establishing variance procedures, the Legislature intended that only appeals of approvals would go to the EQC, and that the proper appeal venue for a variance denial would be circuit court. The amendment conforms the rule to this understanding of legislative intent.

How was the rule developed?

There were no documents relied upon for development of these rules. An advisory committee was used for the development of the proposed rule amendments. The committee consisted of twelve members broadly representing all aspects of the on-site industry. Participation has come from septic tank installers, pumpers, portable restroom providers, consulting engineer, soil scientists, developer, consulting sanitarian, county on-site staff, city on-site staff, and a college professor. A total of six meetings were held.

Given the limited time available to affect the next application renewal deadline, the advisory committee operated on the basis of a "consensus" decision-making rule. That is, every recommendation included in this rule amendment package was unanimously supported by all committee members present and voting at the meeting in which this issue was considered. The amendments also have the approval of DEQ staff.

Issues that were too complex for the time available to discuss them, or on which consensus could not be reached, were set aside for further discussion and a later rulemaking proposal.

Memo To: Interested and Affected Public Amendments to the On-Site Sewage Disposal Rules Page 5

Whom does this rule affect including the public, regulated community or other agencies, and how does it affect these groups?

The proposed rule amendments affect all businesses which apply for on-site sewage disposal licenses by eliminating certification requirements for some and delaying them for others. People appealing denials of variances will be affected by a requirement that they bring that appeal to circuit court rather than to the EQC. Applications for permits to install trenches following sand filter systems will experience less restrictive siting requirements, and portable restroom businesses supplying and servicing portable holding tanks will end their technical violation of an (unenforced) requirement that each of the tanks be regulated through a Water Pollution Control Facilities (WPCF) permit. Public employees, on-site businesses, and the general public who have occasion to read or otherwise use the on-site rules will find 16 provisions (benefiting from housekeeping changes) clearer and less confusing.

How will the rule be implemented?

The rule will be implemented by DEQ staff in applying the new licensing requirements to the onsite sewage disposal license renewal applications received for the year starting July 1, 1997. Other aspects of the rule amendments will be communicated in guidance to DEQ and county agent field offices for implementation in the construction/installation permitting program.

Are there time constraints?

Yes. If amendment of the certification requirements is not accomplished before June 30, 1997, all on-site sewage disposal businesses applying for a license to operate from July 1, 1997 to June 30, 1998 will need to meet the existing provisions of OAR 340-71-600.

Imposition of the current requirements for July 1, 1997 would create chaos in the on-site industry.

Contact for more information

If you would like more information on this rulemaking proposal, or would like to be added to the mailing list, please contact: Martin Loring at 811 SW Sixth Avenue, Portland, OR 97204, Sixth Floor. He may be reached at (503) 229-5415.

ATTACHMENT C

State of Oregon Department of Environmental Quality

Memorandum

Date: June 6, 1997

To: Environmental Quality Commission

From: $M \mathcal{M} Martin W.$ Loring

Subject: Presiding Officer's Report of Rulemaking Hearing

Hearing Date and Time: Tuesday, April 22, 1997, beginning at 10:00 a.m.Hearing Location:DEQ Northwest Region OfficeFourth Floor Conference Rooms A & B2020 SW Fourth AvenuePortland, OR 97201

Title of Proposal: Adoption of Amendments to On-site Sewage Disposal Rules

The rulemaking hearing on the above titled proposal was convened at 10:03 a.m. Those present were asked to sign in and fill out witness registration forms if they wished to testify. They were also advised that the hearing was being tape recorded and told the procedures to be followed.

In addition to the presiding officer, six people attended the hearing, and none signed up to offer testimony. The people in attendance were as follows:

Sherman Olson, DEQ Headquarters Dewey Darold, DEQ Headquarerrs Dennis Illingworth, DEQ Northwest Region Anne Cox, DEQ Northwest Region Maveida Redding, City of Portland, Bureau of Environmental Services Diane Naglee, R.S., Jefferson County Environmental Services

Martin Loring, Dewey Darold and Sherman Olson briefly explained the specific rulemaking proposal and the reason for what is proposed. The audience was then asked if there were questions.

There were, and a discussion of the rulemaking proposal ensued involving all present. At 11:00 a.m., those in attendance were again asked if anyone wanted to testify on the on-site rule amendment proposal. Ms. Naglee, R.S. said that she would submit her comments in writing by the Friday, April 25th deadline. No one else said that they wanted to testify, and the hearing was closed at 11:05 a.m.

Attached is written testimony received as part of the hearing record.

COMMENTS RECEIVED ON THE PROPOSED ON-SITE RULEMAKING AND THE DEPARTMENT'S RESPONSE TO EACH

No oral testimony was received at the April 22, 1997 hearing held by the Department. However, written comments on the rule proposal were received from five individuals or groups of individuals on, or before the comment period closed April 26, 1997. A summary of the comments received and the Department response to each follows:

<u>1. Portable Sanitation Industry Representatives</u> - A signed facsimile transmission was received six individuals representing companies active in the portable sanitation industry within Oregon. Included were Cliff Porter, Northwest Sanitation; Sandy Miller, Northwest Sanitation; Roy Lumber, Schulz Clearwater Sanitation; Bruce Phillips, Cascade Phillips Company; Don Sherwood, Roto Rooter Service; and Homer Rhodaback, Best Pots Inc:

These individuals propose substitute language for OAR 340-71-340(5) which is the part of the proposed rule regulating temporary holding tanks. The language would exempt above ground holding tanks from the first four sections of section 340, as well as from the general prohibitions against discharge and threatening public health found in OAR 340-71-130, and the tank construction standards of OAR 340-73-025, as follows:

- (5) Above ground holding tanks shall be exempt from the provisions of rule 340-71-340, (1-4), 340-71-130, and 340-73-025 as long as the person or entity in possession of the holding tank has entered into a contract with a licensed sewage disposal company.
 - (a) The service contract will show that the tank will be pumped periodically, at regular intervals or as needed, and the contents disposed of in a manner and at a facility approved by the Department.
 - (b) A copy of the service contract shall be available in a reasonable amount of time at the Department's request.

Temporary holding tanks pose a long standing regulatory dilemma for the Department. A strict reading of statute suggests that each portable holding tank is an "alternative" on-site sewage disposal system requiring a permit. However, thousands of these systems have been in use around the state temporarily at construction sites, the State Fair, etc. for 10 years without causing a problem despite the fact that DEQ has not regulated them by permit.

The Department finds requiring a permit for each temporary tank to be unreasonably burdensome and costly, but believes that the industry proposal goes too far away from what is needed to protect public health and is contrary to statute. The draft rule attempts to affect a reasonable compromise with the portable sanitation industry.

Under the draft rule, temporary holding tanks would not be regulated by permit, but neither would they be exempt from Departmental regulation. The compromise solution is to allow temporary holding tanks as long as they are owned and operated by a licensed sewage disposal service company, and as long as they meet reasonable standards deemed by the Department as necessary to protect public health and waters of the state. The Department respectfully disagrees with the changes requested by the representatives of the portable industry.

2. Richard L. Polson, Building Services Supervisor, Clackamas County, Department of Transportation & Development: Mr. Polson offers four suggested changes to the rule proposal. His recommendations and the Departments response to each follow:

a) With respect to OAR 340-71-440, Mr. Polson makes substantive arguments in favor of retaining the current practice of having appeals of both approvals and denials of variance requests heard by the Environmental Quality Commission - Mr. Polson makes an argument about equity and fairness that is reasonable but irrelevant to the Department's point. The substantive issue of who should hear what type of variance appeal is not before the Commission. The narrow issue presented to the Commission by this portion of the rule amendment proposal is whether the current rule and practice conform to statutory requirements. Counsel has advised that their reading of statute and the legislative history is clear that the Legislature intended only appeals of approvals to be heard by the Commission. Therefore, the Department has no choice but to change the rule to conform it to the statute.

- b) Begin requiring system installers to be certified now rather than waiting until the year 2000 - Mr. Polson is correct that the Department has had this task to do for some time. An effort has been made to implement the certification mandate without any additional staff resources or fee revenue to pay for it by diverting staff time and resources from other work. The result has been that over nearly two years we have only been able to get about 20% of the people certified that could be affected by this requirement at the cost of falling badly behind in terms of keeping other important commitments. Taking away the livelihood of installers and other on-site sewage disposal service businesses because the Department is unable to test them all by an arbitrary deadline serves no environmental purpose and is bad public policy. The time delay proposed in the draft rule is for the purpose of trying once again to obtain the revenue, staffing and other resources needed to do the job right. If resources can not be found to carry out this mandate appropriately, it would be better not to do it at all than to do it badly. As such, the Department opposes Mr. Polson's suggestion that we do nothing and let the certification requirement go into effect July 1, 1997.
- c) Mr. Polson suggests a grammatical improvement to OAR 340-71-600(4)(e) as follows: Businesses that only engage in on-going system pumping and cleaning or placement of portable toilets are exempt from this requirement. - The Department agrees to make this change.
- d) Mr. Polson recommends that no change be made in rule until the fate of a couple of senate bills affecting the on-site program is known Mr. Polson raises a good point. Waiting until the Legislative session is done would eliminate the possibility that current rulemaking would turn out to be a waste of effort because it has to be redone.

Unfortunately, this is a risk that the Department must take because rulemaking is needed before July 1, 1997 to avoid the crisis that would result if the Department had to refuse to renew the licenses of a significant number of on-site sewage disposal businesses because they have not yet obtained certification.

3. Josephine County Board of Commissioners - The Commissioners offered a suggestion that instead of charging the owners of permanent holding tanks an annual compliance determination fee and performing inspections ourselves, the Department should maintain a registry of the tanks and license qualified people in the community to conduct inspections.

The Department is very interested in following through on the Commissioner's suggestion. It proposes the kind of regulatory flexibility that the Department favors, where public health is protected at the lowest possible cost to the public. Unfortunately, upon advice of counsel, the Department will not be able to implement this suggestion as part of this rulemaking.

(...)

The reason for this is that the subject matter (annual compliance determination fees for a type of Water Pollution Control Facility permit) was not discussed by the On-site Technical Advisory Committee, nor was it part of the public notice or fiscal impact statement prepared for this rulemaking. As such, making the recommended change at this time would violate procedural requirements for state agency rulemaking.

However, the Department is going to proceed with rulemaking to implement this suggestion through a separate, temporary rulemaking procedure.

<u>4. Diane Naglee, R.S.</u> - Ms. Naglee is a registered sanitarian in the employ of the Jefferson County Department of Environmental Services, one of the 22 contract counties providing on-site field services. She suggests eight substantive and wording changes, as follows:

a) OAR 340-71-220(6)(C) requires a gasketed manhole cover for dosing tanks. This should also apply to septic tanks in OAR 340-71-220(3)(b)(C). The Department concurs that septic tanks also need a gasketed manhole cover, and believe this requirement is already contained within OAR 340-73-025.

b) Page 36 typographical error in spelling the word "shall". Ms. Naglee is correct and the change has been made.

c) Page 35, (3)a(a-c): to protect public health and our natural resources, trenches following sand filters should not be allowed six inches into high groundwater until additional research is done to conclusively demonstrate the effects of such action. - Staff was unable to reach agreement on this issue, and as such, there will not be a recommendation for consideration by the Commission at this time.

d) Page 40, g(C): typographical error in the spelling of "accessible" - The correction has been made.

e) Page 43, #2: the word "tank" should be plural. Ms. Naglee is correct, and the change has been made.

f) Page 44,45 #5: definition should designate the temporary use of portable holding tanks, clarify if tanks must be removed after each event, specify that temporary holding tanks do not require alarm systems, specify if tanks need to be approved by the Department, and identify the minimum size for portable holding tanks. The word "temporary" has been added to the proposed rule language.

Staff believe that because these tanks are placed under a service contract, they are not likely to remain after the project has been completed. Temporary holding tanks described in section (5) of the rule are not subject to the requirements within section (2) of the rule, therefore the high water alarm is not required. Staff do not believe plans for these tanks need to be reviewed and approved by the Department. The minimum size of the portable tanks was an item of discussion for the technical advisory committee. The view was, and staff agree, that the lower size limit of the tank need not be established by rule because the service market will likely make extremely small tanks unprofitable to use. In any case, the licensed sewage disposal service company that owns and services the tank is held accountable for insuring the tank is serviced with sufficient frequency to prevent health or environmental risk.

g) 340-71-265(2)f: current wording allows capping fill systems to be built with no capping fill above the ground surface for certain sites which conflicts with the backfill requirements for capping fills. Unfortunately, upon advice of counsel, the Department will not be able to implement this suggestion as part of this rulemaking.

The reason for this is that the subject matter (capping fills) was not discussed by the technical advisory committee, nor was it part of the public hearing or fiscal impact statement prepared for this rulemaking. As such, making the recommended change at this time would violate procedural requirements for state agency rulemaking guidelines.

However, the Department will pursue rulemaking to implement this suggestion either through a separate, emergency rulemaking procedure, or through a subsequent, permanent rulemaking process that is planned to begin soon for the on-site program.

h) Table 1, setbacks #4 and #7: setbacks conflict with OAR 340-71-100 definition #109 for "public waters", i.e. canals are public waters by definition, but Table 1 has a different and less respective setback for irrigation canals, and irrigation ponds are not dealt with at all. Unfortunately, upon advice of counsel, the Department will not be able to implement this suggestion as part of this rulemaking.

The reason for this is that the subject matter (Table 1) was not discussed by the technical advisory committee, nor was it part of the public hearing or fiscal impact statement prepared for this rulemaking. As such, making the recommended change at this time would violate procedural requirements for state agency rulemaking guidelines. However, the Department will pursue rulemaking to implement this suggestion either through a separate, emergency rulemaking procedure, or through a subsequent, permanent rulemaking process that is planned to begin soon for the on-site program.

- **5** Oregon Water Resources Department Our sister state agency raised a concern about a proposed amendment to OAR 340-71-290(3), subsections (A), (B) and (C). The amendment would allow the bottom of disposal distribution trenches used after a sandfilter treatment system to penetrate "up to six inches below the high groundwater level" of a "temporary groundwater table". The Oregon Water Resources Department recommends removing this amendment for technical and legal reasons. A discussion of the reasons and the Departments response follows:
 - a. **Technical reasons** Scientific literature says that disposal trenches are an important wastewater treatment component of onsite systems as long as wastewater discharges to the unsaturated zone (zone of aeration) where microorganisms and reactive chemicals can adsorb to soil and be broken down.. Discharge at or below the water surface will reduce treatment, and water greatly increases the mobility of contamination.
 - b. Legal reasons The ORS 454.605 definition of "absorption facility" says that it distributes effluent for oxidation and soil absorption within the zone of aeration, which is the unsaturated zone below the ground surface and the upper limit of the water table. This statute is taken to mean that wastewater should be discharged above the water table. ORS 537.525 declares the groundwater polity of the state to be to protect if from pollution, and ORS 468B.155 declares it the goal of Oregon to prevent contamination of ground water.

The Department finds the argument of Water Resources Department to be forceful and compelling that the state should not allow any disposal trench to be built in groundwater (temporary or otherwise).

ATTACHMENT D

An attempt was made to rewrite this section of the rule to be clear and support this position. Unfortunately, it was not possible to obtain sufficient agreement to proceed with a rulemaking proposal. As such, the proposal that was part of the public notice is being withdrawn at this time and is not considered part of the permanent rulemaking proposal. This issue will be referred back to an On-site Technical Advisory Committee for additional discussion and work. It is likely to be part of a future rulemaking proposal.

There is no attachment E

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ATTACHMENT F

ADVISORY COMMITTEE MEMBERSHIP AND REPORT

An advisory committee was used for the development of these proposed rule amendments. The committee consisted of twelve members broadly representing all aspects of the on-site industry. Participation has come from septic tank installers, pumpers, portable restroom providers, consulting engineer, soil scientists, developer, consulting sanitarian, county on-site staff, city on-site staff, and a college professor. A total of six meetings were held.

Attached is a list of committee members.

Attached are the minutes for the six meetings.

1996/1997 ON-SITE RULE ADVISORY COMMITTEE

Terry Bounds Orenco Systems, Inc. 814 Airway Avenue Sutherlin, Oregon 97479-9012

Mike Ebeling City of Portland/Bureau of Buildings 1120 SW Fifth Avenue, Room 930 Portland, OR 97204

Dan Haldeman Environmental Health Department Courthouse Annex Bend, Oregon 97701

Michael L. Madson Pioneer C.M., Inc. 925 Fox Hill Lane Roseburg, Oregon 97470

Alex Mauck Alex Mauck Septic Services, Inc. 931 N.E. Harlow Place Troutdale, Oregon 97060

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Cliff Porter Northwest Sanitation P.O. Box 900 Gresham, Oregon 97030-9998

Bob Rapp Oregon Building Industry Association 7030 SW 209th Beaverton, OR 97007

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MINUTES OF DECEMBER 5, 1996

DEQ ON-SITE ADVISORY COMMITTEE MEETING

Committee Members Attending Bruce Phillips, Chair J. Ronald Miner John L. Smits Cliff Porter Robert C. Paeth Stan Petrasek Dan Haldeman

Members Absent Michael Madsen John Chandler Terry Bounds Alex Mauck

DEQ Staff

Martin Loring, DEQ-Portland HQ Sherm Olson, DEQ-Portland HQ Dewey Darold, DEQ-Portland HQ Bijan Pour, DEQ-Portland HQ Robert Baggett, DEQ-Pendleton Regional Office Paul Heberling, DEQ-Roseburg Regional Office Karen D'Eagle, DEQ-Portland HQ

Chairman Bruce Phillips called the meeting to order with introductions of all Committee Members, DEQ Staff, and public participation.

Martin Loring opened the discussion addressing the temporary rule passed by the EQC to restrain the Certification Testing Rule until January 1, 1997. As of January 1, 1997, the rule effective April 1, 1995, will once again be effective. If the testing rules are not revised by this committee the testing requirements for all Installers, Pumpers, and their employees must pass the test by July 1, 1997. The Departments perspective is to have a permanent rule adopted that is less stringent than the present rule for Certification Testing. During this process of rule amendment the Department is asking the Committee to present a type of fee recommendation that would support Staff to implement the revised rule.

A budget package presented to the Governor, in favor of fees for the On-Site program for the Department's budget period of 1997-1999 was rejected by the Governor. As a result there will be no On-Site fees coming from the Department to implement the April 1, 1995 adopted rules. A Legislative Concept was also presented to the Governor to put the Certification Testing regulation in statute, however the Governor also rejected this recommendation.

What the Department is left with is a laundry list of technical issues the staff would like the committee to decide upon within a designated time frame to be presented to the Environmental Quality Commission (EQC). The deadline is to go to the EQC in June. In order to meet that requirement the Department

would need to have recommendations from the Committee by the end of January, and no later than early February. It will be necessary to file the Departments intent for Public Hearing by February 15, 1997 to the Secretary of State. The Secretary of State requires a 30 day notice to publish the Departments intent to hold a hearing to modify the rules within the next 30 days. All the testimony that is presented to the Department, whether verbal or written, will be taken in consideration by the Department. If the hearing testimony recommendation is a valid point the Department could incorporate the issue into the rule modification. If the testimony is not feasible, it will be addressed with reasoning why the Department could not accept that recommendation. Considering the amount of issues this Committee needs to address to meet the June EQC meeting, the Department needs to be able to go out for public hearing by March of 1997.

The role of this committee is to determine the best options to these rule amendments, just as the staff will also make the best options for adopting the amended rules based on the testimony presented to the Department from the public hearing:

After a lengthy discussion as to the Interim Administration of Water Quality, and the reorganization of the Water Quality Sections, Chairman Phillips moved onto Agenda Item 3.

The committee asked many questions on the proper rule process, and asked how after the public hearing they could review the testimony submitted. It was explained that the four priority items that are on the Agenda, are issues we are asking the Committee to address at this time. The other issues are housekeeping items, which if the Committee and the Department are unable to meet the June EQC deadline, we can continue to meet and address the technical issues at a later EQC meeting. It was also explained that after the hearing process is completed, no more comments can be submitted to the Department.

The Committee requested that the Department present how the rule presently reads, with mark-up of the Department's recommendation for rule revisions. Martin Loring suggested to the committee that his preference would be to present the best option in the amended rule, that is agreeable to all parties.

Certification of Testing Requirements: It is important to make the distinction from Licensing which is a State law, and Certification Requirement, which is a level of knowledge. Currently, since the Budget for the On-Site program was denied, the Department has no resources or staff to implement the Testing Requirement. Currently the Department has graded 850 tests. During the first four months 45-50% were failing the first test developed. It was necessary to change the test, or we would not be able to achieve the goal of everyone passing the test. Another test was developed, and the pass rate now is 90-95%. We do not have a clear picture if all licensees have passed the test, or, what the ratio of employees have taken the test and passed. The Department suggested that O2WA is interested in giving the test or some sort of certification, as well as PSAI is also interested. The bottom line is the Committee has an open option on the direction on this rule. It was questioned whether DEQ offices, or County offices would be available to use as test sites. The Department noted that if the DEQ gave the tests, again it would mean taking staff time away from the work they should be doing, to perform a regulation that has no funding resources for staff. The counties have advised DEQ that it is not the counties requirement, it's a DEQ issue. The Department noted that they had received information that the quality of work of the individuals who have taken the test it has been observed that there is better quality of work seen during on-site inspections. The Committee all in voted in favor that this rule be amended.

Chairman Phillips brought the discussion back to order, and suggested that the Committee move on and prioritize the issues addressed on the Agenda. Even, if it means going through the process of going to the EQC a second time with remaining issues on the agenda.

<u>Sand Filter Rules:</u> The issue here is an interpretation of the rule, and how it applies to groundwater. The situation relates to disposal trenches that receive treatment from Sand Filters, and it is not clear if those Sand Filters can be imerged in groundwater, or whether they are to be above water. This rule as written is ambiguous. When the Department deals with systems in general, the standards that apply to a standard

system for septic tank construction specifically applies to all alternatives, unless the alternative specifically provides an exemption or deviation from the standard rule. The Sand Filter rule was put in effect years ago, and there was an understanding at that time what it said, but the language did not address specifically if a trench could be emerged into groundwater. The question the Committee needs to address is should trenches be placed in groundwater when there is a Sand Filter system involved. This rule must be clarified so that it is consistent State wide.

The Department's position that a trench should not be in groundwater, no matter what type of system is involved. But, in any case the ambiguity needs to be removed, and the rule clarified.

The other issue is the effective soil depth be spelled out in the Sand Filter section of the rules, whether the limit of soil depth is applied.

The issue regarding this rule is whether the Committee agrees that this rule need clarification, and if so what priority should it be ranked.

Chairman Phillips asked for a vote as to what number of priority this issue needs to ranked. The Committee ranked this as a two, after the issue of Certification Testing.

Changes to definition "conditions associated with saturation"

It was brought up that this will change a lot of the definitions, and should be included with the previous Sand Filter discussion.

Variance Procedures

Over the past years the interpretation of the legislature intent in this rule would allow appeals of approvals go to the EQC. It would give third parties a chance to appeal. It was never intended that the appeals of denials would go through the EQC appeal process. Staff had the Department of Justice look at the rule, and were advised that the current rule is contrary to what the initial intent of the rule. The Department would like to amend this rule to follow the legislative intent that appeals of approval go to the EQC, and appeals on denials go to Circuit Court. Currently DEQ is using contract hearing officers for Variance appeals. The main issue is that it costs less to request a variance, than to have a site assessment. As a result it takes up a lot of EQC and staff time on these variances, when in fact it should be going through the court system. The average is approximately 45-60 variance requests come into the Department, and out of those the ones that get appealed in one year is approximately eight. Currently throughout the Agency the Department has 18 staff Variance Officers throughout the Regional Offices. Greg Farrell has done an analysis on what it actually costs the Department, and the staff time involved is approximately \$1,300, which does not include EQC time. The current fee for a variance will not be revisited, we are only wanting to have the correct intent of this rule implemented.

Chairman Phillips asked what priority level should this be with a 1-3 ranking. Four Committee members voted it as a Priority 3, one voted as a priority 2, with one member not voting.

After the lunch break, Chairman Phillips called the meeting back to order at 1:40pm, and asked how the members wanted to address agenda item B. Other Issues—members recommended that all the issues be presented by the Department as to whether there are housekeeping issues, or if a priority ranking was needed.

Sherm Olson addressed the tasks in order, and the notes as to the priority are reflected below as how the Committee or the Department felt the issues need to addressed:

(Note: An H before the topic represents a Housekeeping item with low priority.

H-Dosing clarification 73-055(4)(d) (f), (d) represent screen (f) represents a larm for dosing tanks, and only applies to those that are tanks that are there for pumps.

H-Filter fabric standards. The standards need clarification for sand filters, but not as important to drainfields.

H-Wastewater strength definition. The Department would like the word typically put in the range of wastewater perimeter values. Currently it reads BOD does not exceed 300, plus other factors.

H-Table 2. Not part of the rule. Needs to be removed.

H-315(2)(e) 12 inch trench. Needs to be in rules as a standard width.

H-Delete 340-71-605-Delete date of 4/1/95 which was a past practice, and amend to 7/1.

H-Delete 340-73-090 Delete from rule.

H-295(3)(g) discusses distribution in a pressurized sand filter system pertaining to the minimum of one orifice per six square feet. Needs to be clarified. Would be better addressed as indicating minimum,. orifice spacing from trench to side-wall of not more than 30 inches apart, and the pressure laterals not be spaced further than 30 inches apart. This would give a uniform application rate.

The Department suggested that the remainder of the topics listed under Other Issues, be presented at the next meeting addressing the issue, and whether it should be a housekeeping issues, or if they need to be a higher priority than a housekeeping item.

Chairman Phillips redirected the meeting back to the first item under B. Other Issues. -Home Loan Evaluations- Relates to existing system reports where someone has asked for a report on an existing system.. (ie, new home owner, contractor, current owner, financial institute.)

-Role of TRC-Discussion in past what the role of TRC, other than making product recommendations. Should the products be reviewed within DEQ, or TRC. Their role is give the Department their recommendations, for the Department to take to the EQC.

-Sand Filter 290(6) relates to separation distances from the under drain collector pipe in the sand filter to the top of gravel and disposal trench. Previous rules indicated there was a specific standard that said there would be a 12 inch elevation difference from the outlet invert from the collector pipe to the top of the gravel. It now reads that you would need two inches from the top of the gravel. The Departments concern is that we don't want effluent migrating in and undermining the sand filter. Would need a double pump construction. DEQ agreed that they would provide some language to the Committee. Item 295(3) (e)&(g)(a)-discussion determined it was a non-issue, and that any new innovative product would need to go to TRC for recommendation, however it opened the discussion as to what is the role of the TRC. 295(3)(g) relates to laterals and valves, request the rule put a threaded cap on discharge site.

-Pipe materials-1.25" diameter piping. The concern about going with small diameter piping effluent sewer pipe. Counties have expressed concerns on the small size of pipe. No clean outs are specified. Chairman Phillips asked if it should be deleted, and vote was taken with six members agreeing there is nothing to address, and one member did not vote, and had no comments.

-220 (3)(d)- Intent is that waste being pumped from an isolated area to a septic tank. Committee requests DEQ could come up with language, and DEQ agreed to provide language for this rule revision.

-Table 2 Quantities of sewage flows during peak design flows. Mobile Homes need to be revised, and look

at specific dwellings and change with adequate realistic data. This change would require fee revisions for the flow differences. Chairman Phillips requested Sherm to provide resources at the next meeting, however it is a low priority item, and the Department requests this be a low priority item. However, Chair wants to address this at the next meeting even if DEQ is able to pull together data.

H-Drain Media: Housekeeping item. Suggested to use uniform sizing.

Policy 340-71-120(3) remove from rules. Vote taken and six Committee members agreed, and one member had no comment.

340-71-130(15)(a)-This involves RV Mobile Home Parks with multiple systems. Recommendation is to change per parcel, vs. Per building. Seven Committee members voted this as a level 2 priority item.

DEQ agreed to screen the Housekeeping items from the priority rules that need to be addressed. immediately.

Dosing Tank-220-(6)O- DEQ agreed to write how they want the language to read.

71-265(1)(d) is a housekeeping item . Housekeeping item, need to eliminate separation.

290(7)(b) - Housekeeping item which need clarification.

340-Needs a re-write for Holding Tanks. There is no intent to eliminate, however construction sites holding tanks need language, providing if time allows. This is a higher priority than a housekeeping item. The Committee voted on this priority with four members agreed this is a priority two issue, other member felt this is just a housekeeping item.

As a result of the immediate deadlines this Committee has Chairman Phillips scheduled the following meetings schedule:

December 19, Room 3A, 10:00am to 3:00pm

January 8 Room 3A, 10:00 to 3:00pm. Bob Paeth will address saturation.

January 21 Room 3A, 10:00 am to 3:00pm

February 5, Room 3A, 10:00 am to 3:00pm

The meeting adjourned by 4:00pm.

Please contact Karen D'Eagle at (503) 229-6814 if you wish to listen to the Committee Meeting tapes recorded for reference.

Minutes of December 19, 1996 On-Site Advisory Committee

Committee Members Attending Bruce Phillips, Chairman Cliff Porter Terry Bounds Alex Mauck Dan Haldeman Stan Petrasek John Smits Ron Minor

Members Absent Michael Madsen John Chandler

DEQ Staff

Martin Loring, DEQ-Portland HQ Dewey Darold, DEQ-Portland HQ Bijan Pour, DEQ-Portland HQ Robert Baggett, DEQ-Pendleton Regional Office Gregg Farrell, DEQ-Roseburg Regional Office Karen D'Eagle, DEQ-Portland HQ

At 10:15 Chair called the meeting to order, noting that five hand-outs were passed out to all committee members. Chairman Phillips asked that everyone introduce themselves and identify their affiliation to this committee.

Following the Agenda, the first order was to review the minutes of the December 5, 1996 meeting. Cliff Porter contested to the language of the minutes regarding the minutes for the rewrite on Holding Tanks. This amendment will be handed out at the January 8th On-Site Meeting.

All other members voted in favor of accepting the minutes.

Dewey Darold asked the chair to clarify the location of the February 5th meeting will be held at the Dept. of Environmental Quality, 811 SW Sixth Avenue, in room 6A, located on the Sixth Floor of the Executive Building. The January 21, 1996 meeting will be held at the American Bank Building, 621 SW Morrison Street. (This is on the North side of Morrison Street, accross from Pioneer Courthouse Square.) Chairman Phillips began the actual meeting reading the purpose of this Committee, the On-Site Advisory Committee has been assembled to review and recommend changes to the Department with respect to the administrative rules that govern On-Site sewage disposal systems, materials and licensing. In addition, the committee may choose to examine other on-site administrative rules. Since this identified the purpose of this committee, Chairman Phillips went on to follow the prepared agenda.

The next item on the Agenda asked for any Public Forum Comments. No comments or issues were presented by the public.

Agenda Action Items:

Agenda #1. Sewage Disposal Service Licensing: Chair indicated that this topic will take up most of the time set aside for the meeting.

<u>Agenda #2.</u> Review other On-Site issues within OAR Chapter 340, Divisions 71 and 73.

The Chair opened the discussion for Certification Testing. Chairman Phillips asked that Martin Loring address what is currently in place for testing. Martin Loring suggested that everyone turn to the handout titled 'Certification Testing of Sewage Disposal Service Licensees and Workers'. This handout gives background on the administrative rule adopted in April of 1995. This requirement enforced anyone holding a Sewage Disposal license, or working for a licensed Sewage Disposal company must either take the test and passing the test and be certified, or take a DEQ Training Session. To date their have been no DEQ Training Courses offerred. So far, the certification process has only addressed taking a test. This rule was to become effective July 1, 1995. Since DEQ could not prepare a effective program by the deadline date, the Department went through the Environmental Quality Commission (EQC) to request a temporary rule, that would delay the certification requirement until January 1, 1997. The temporary rule also narrowed the scope of the

certification requirement from licensees, and employees engaged in the installation, to just licensees. The temporary rule also affected Pumpers as to what they were required to submit with their license applications.

The 1995 rule made one change in that prior rules required pumpers to keep detailed origin destination records, and supply them to the Department, at the Departments request. The 1995 rule not only required the origin records be maintained, but submitted each year with their annual application for license. The Department would prefer the old rule be reinstated.

If the Committee does nothing to revise the 1995 rules, the regulations adopted April of 1995 will apply, and be enforced.

The Department is requesting that the Committee come up with revisions to these requirements prior to July 1, 1997. There are several option the Department would like amended, and most of all get out of the certification testing, or recommend the language used for the temporary rule for certification testing. Another option would be if the Committee thinks a certification testing is necessary, move the date further out in the future to allow the Department to properly develope a testing and training program. The Sanitation Association is a association that has a testing certification, and is affiliated with the National Trade Association of the Portable Sanitation Industry. Their requirements are not comparable to Oregon's rules; but Oregon may recognize the PSA guidelines as meeting Oregon's regulations and exempt them from taking Oregon's testing requirement. Other Certification testing the Department requires has been grandfathered in, and would exempt them from taking Oregon's test and only new employees were required to take the Oregon's test. Other options deal with changing the license application to read that they only want to pump, they only want to install, or pump and install, and develop craft tests that would only pertain to their type of business operation. The Department goal is to try to have the rules revised, that would be achieveable with the Departments resources. One of the proposal made in the budget process was to seek a fee for the

certification testing so the Department would have staff resources to run the program, however, the Governor said no to the fee process. It does not mean we cannot run the program, but the resouces are finite and limited, and the resources used to run the On-Site program, it shortfalls other areas that fees were paid for some other service, so that service would have the shortfall of not having the staff to operate that program. Additionally in the budget process three positions were lost, and will not be filled, until we can go back and request those positions, which will not be until 1999. Whatever comes out of this program will cost money, and will come out of existing fees. There is no federal monies available, or general fund monies.

Chairman Phillips suggested that before any motion is made on Certification Testing, the committee needs to discuss some other options that the private sector possibly could assist the Department in implementing the testing.

Terry Bounds, O2WA has been discussing many possibilities. One of the first things he thinks everyone agrees on, the final permanent rule should be more in line with the interim temporary rule, with speciality clauses that allow portable toilet folks to take a speciality test that best suits their qualification. Bounds also recommends that the Department contact the Board of Examiners, and with Community Colleges. Another Committee member also suggested the Department contact the Oregon Building Codes which also give certification.

A recommendation was made that to the Chairman that a roundtable vote be taken as to which Committee members are for a testing program, versus those that think it should be eliminated.

Chair accepted the motion, and the following are excerpts from each member:

Cliff Porter: Recommends elimation. The Department has already stated the rescources are not available. In my industry they already have testing. Does not want a program that can only be sort of run. Cannot speak of regular pumpers and installers, and knowing that perspective may alter his decision. Would rather have DEQ out there doing inspections and enforcement.

Ron Minor: Does not have a opinion from a practical standpoint, but from his background there needs to be a testing program to give the consumer protection. Believes that the Department could negotiate with Community Colleges; county extension offices. The Department could offer training and put cost of testing and training with a fee.

Terry Bounds: Wants testing, result would be better work. Need to elevate the individuals in the industry with all, and new technologies.

Alex Mauck: He is for certification. Need an educated industry. Portable toilet are different depending on direction holding tank rule revisions go.

John Smits: Need testing. Exempt the Chemical Toilet companies.

Mike Eberling: In favor of testing.

Dan Halderman: In favor of testing.

Stan Petrasek: In favor of certification program. Potential to perhaps having categories of licenses.

Chairman Bruce Phillips: In favor of certification testing.

(During the round table vote, the discussion became sidetracked that DEQ amended the test after a considerable amount of failures. Some feedback from opertors that took the test feel better about themselves and their profession. Bob Baggett added that training would be an asset, to make the program challenging and encourage indusry to get involved. Terry Bounds added that Umpqua C.C. took on testing and the manufactureres are delivering items for training. Alex Mauck though the average installer would not take the training. Needs to have government involved to get the installers involved. Terry Bounds wanted to add the rules say the Department is required to implement, however, many Department Staff came forward and indicated the Department has tried, and it has not be successful due to lack of resources. Terry Bounds suggested that perhaps a grant could be obtained for training by EPA.)

O2WA suggests that the rules turn the entire requirement over to the Community Colleges and charge a fee for training and testing.

Alex Mauck added that Washington is establishing State Regulations for the On-Site program. Perhaps a committee individual, or the Department discuss with Dept. of Ecology for information on their rules.

In wrapping up this discussion Martin Loring indicated that the Department would not have problems having Community Colleges take over the testing, but to turn it over to an Association, the delegation of that would require advice from the Attorney Generals Office for delegating that function.

In the afternoon, Chairman Phillips directed the committee toward discussion of the date that rule 340-71-600 should be amended to for implementation.

(A long discussion of miscellaneous content, if any member is interested in hearing this discussion, please contact Karen D'Eagle at (503) 229-6814, and a tape copy of this discussion will be provided to you.)

Chair asks for vote by the members on the date to amend implementing the date certification testing. Chairman read a motion, and the votes for 7-1-97were 2 Committee members, and the date for 7-1-98, 6 members voted in favor.

Based on majority rule, the rules revision will read: Beginning July 1, 1998, in order to be licensed the applicant must pass written examination to demonstrate familiarization with the on-site rules found in OAR Chapter 340, Divisions 71 and 73, or attend a Department approved training session. It is duly noted that Cliff Porter wanted to on record his opposition to the testing. He will help assist the other committee members.

It was also noted that at another meeting the Committee needs to correct the definition of holding tanks.

Meeting adjourned at 3:00pm.

Anyone requesting copies of the tape recording of this meeting, please contact Karen D'Eagle, (503)229-6814.

DEQ ON-SITE RULES ADVISORY COMMITTEE MEETING MINUTES January 8, 1997

Committee Members Present:

Bob Rapp, Oregon Building	Alex Mauck, Alex Mauck Septic	Michael L. Madson, Pioneer
Industry Association	Service, Inc.	C.M. Inc.
Dan Haldeman, Deschuttes Co.	Terry Bounds, ORENCO	Stan Petrasek, Lane County Dept.
Environmental Health Dept.	Systems, Inc.	of Environmental Health
John L. Smits, Smits & Associates	Cliff Porter, NW Sanitation	Dr. Robert Paeth

Committee Members Absent:

Chair Bruce Phillips, Cascade	J. Ronald Minor, OSU Dept. of	
Phillips Co.	Bioresource Engineering	

DEQ Staff Present:

Robert Baggett, Eastern Region On-Site Manager	Greg Farrell, Western Region On-site Manager	Martin Loring, Headquarters
Craig Costello, Eastern Region	Tom Hall, Eastern Region	Lawrence M. Brown, Bend
Dewey Darold, Headquarters	Paul Heberling, Western Region	Sherman Olson, Headquarters
Karen D'Eagle, Headquarters	Dennis Illingsworth, Northwest Region	Bijan Pour, Headquarters

Guests Present:

Trent Aguon, Bishop Sanitation	C.B Kruetz, CB Septic Tank Service & C.B.'s Portable Restrooms, LA Grande	Warren Winitzky, McDonald Portable Toilets, Bend
Sandy Miller, NW Sanitation	Eric Browner, Advanced Systems, Bend	Grace Behrens, Byers Septic Service
Ray Lumber, Scherly Clearwater Sani Inc.	Jason Hudson, Hudson Portable Toilets, St. Helens	Mike Hudson, Tuffy Companies
Jeff Wiley, Frank's Sewer Service & Hermiston Roto- Rooter	Carol Rhodaback, Best Pots, Inc., Albany	Glen Gilfery, A-1 Septic tank Service
Lane Magill, Websters Septic Service	Homer Rhodaback, Best Pots, Inc., Albany	Robert Conley, Blue Pacific Septic Tank Service
Steve Shirley, ABCO Sanitary Services	Chris Rhodaback. Best Pots, Inc.	Dr. Herb Huddleston, OSU Soil Science

1) Call to Order and Introductions

Illness prevented Chair Phillips from attending the meeting. In his absence, the meeting was called to order by Acting Chair Stan Petrasek in Room 3A of the DEQ Headquarters building at 10:15 am. Copies of a number of handouts were distributed, and Martin Loring read a fax from Bruce Phillips apologizing

for his being unable to attend, stating his opposition to imposing certification at this time, and pointing out a correction needed in the minutes. Chair Petrasek welcomed the large number of people attending the meeting and asked each person to identify himself or herself and who they represent.

2) Minutes of the December 19, 1996 Meeting

Chair Petrasek asked if there were additions or corrections to the minutes. Cliff Porter reiterated the concern of Bruce Phillips that the minutes said that there was a formal vote on whether or to support certification. Chair Phillips comment was that he had simply gone around the table asking members where they stood on the issue and took no formal vote. It was agreed to make that change. Upon motion by Cliff Porter, second by Dan Haldeman and unanimous vote, the minutes were approved as revised.

3) Certification

Chair Petrasek told the group that we need to finish up the certification issue today before lunch and then move on to conditions associated with saturation and sand filters (time permitting). He also said that he thought there were going to be categories (pumpers, installers, etc.)

Staff responded that there could be, but the discussion draft was prepared based upon the assumption that only installers would be tested. Reference was also made to Chair Phillips fax which was made part of the record along with written comments opposing certification for pumpers sent in by Jeff Wiley of Frank's Sewer Service in Hermiston, Michael R. Rahn, Rahn Sanitary; and Roger Britt Septic and Pumping Service in Heppner. Extensive discussion took place concerning who should be tested and certified among committee members, staff and people in the audience which is summarized below.

Lou ?, an Oregon City pumper said he needs "how to" information on sand filters. He said the test is a problem for him because he is partially dyslexic and doesn't have a college reading level. He wants information available that a common man can understand.

Bob Paeth asked if the pumpers have a set procedure for dealing with (the operation and maintenance needs of) sand filters, to which Chair Petrasek said there is not one in the rules.

Sherm Olson related that 71-305 requires and O&M manual with the certificate of completion. The pumpers related that they never see these.

Steve Shirley, ABCO said that DEQ needs to enforce the rules they have, and not do new rules. He added that there should be some sort of test for pumpers, but that it should be more specific, like a commercial driver's license.

Cliff Porter asked Lane Magill if Washington has certification requirements. He said that they are required to take a class whenever one is called (when there is new information). These are required to get your pumping card and there is no fee for it. They also have to fill out a form with a half dozen things on it and submit it each time they pump.

Mike Watson said he does portable toilets. anything other than the type of effluent would be redundant....He said he was against testing. They already have one with their own association. Don't put us all together.

Jeff Wiley of Frank's Sewer Service said he agreed that everyone should know what they are doing. He was concerned that if he complies and there is no regulation of the people who do not, his costs would be

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higher than the person who doesn't do it right. He agreed with certification. Every other knowledge based business has such requirements, he added.

Warren Winitzky said he was in the Portable Toilet business in Bend. He is for testing, but they should. have their own test along the lines of PSAI.

Cliff Porter asked what the relationship is between testing on the rules and the problems mentioned. He added that there is a strong commitment to testing among installers for testing. The gray area is the pumper category.

Trent Aguon, Bishop Sanitation in Goldendale, WA said he pumps septic tanks and portable toilets and that he read the old and new rule.

Bob Paeth asked, "what do you do when you encounter a sand filter?

Trent said that he hadn't, and Bob said that the only difference is that pressure distribution needs to be flushed. There are no other differences for a pumper and it is not that big a deal. He also said he agreed that they (licensees) should not all be lumped together.

Terry Bounds of Orenco Systems noted the concern of the portable toilet people. He said that if someone has PSAI certification, then they should be approved in lieu of taking the DEQ exam. If not, then DEQ should require them to take the test or join PSA and take their test.

Cliff Porter clarified that someone does not have to join PSAI to take the test, and not all members take it.

Bob Paeth asked if there is a problem with holding tanks.

Sherm Olson responded that trucks with tanks of less than 550 gallon capacity may not be used to pump underground holding tanks.

Homer Rhodabach, Best Posts said he is against testing. All of his people are PSAI certified. He also said that he would like to see DEQ put more energy into assisting rather than regulating, and a lot more time into establishing dump sites. Spend funds to help us, he added.

C.B. Kreutz said he is not in favor of testing pumpers in Oregon. Written testing for four other crafts. Took (installer's) test and found it useless. Important for DEQ to have information available about how to service a sand filter.

Jeff Wiley raised one simple question. If he encounters a rusted out lid or a cracked lid, can he put on a new lid? What is the break off between major and minor repairs?

Sherm Olson responded that any repair needs a permit. Major repairs involve adding to or fixing a drainfield. Minor relates to pipe.

Jeff Wiley concluded that a pumper who makes minor repairs needs to pass the test.

Carol Rhodaback, Best Pots said she was against testing and expressed concern about misplaced priorities at DEQ. There are people out there who dump on the ground, but nothing was done about them.

Roy Lumper, Schulz Clearwater said he is one of the largest pumpers in the state. This program is not broken. The problem with DEQ is "you people" who don't have the gumption to enforce. You people have to suck it up and be in charge, he added.

DEQ ON-SITE RULES ADVISORY COMMITTEE MEETING MINUTES January 8, 1997 Page 4

Terry Bounds summarized that everyone agrees that the availability of more training is needed. Umpqua Community College is developing several levels of programs for pumpers, installers, designers, etc. All will have some sort of quiz after the training. That is where they want to get with the training program with the community college providing help for dyslexics, etc. He also wants enforcement.

C.B. Kruetz said (lack of) enforcement is the problem.

Bob Baggett, DEQ On-Site Program Manager for Eastern Region reported that next biennium the On-Site Program will be three full time positions short. Fee revenue is the only source of money. We are held hostage to that so you won't see any improvements. This (certification) is an addition to what we have to do.

Warren ? of Bend commented on the absurdity of going on with a certification requirement for their industry unless the DEQ wants to come up with some sort of specific program for the portable toilet business.

Stan Petrasek cut off public discussion at 12:40. He summarized that testing does not replace training. It tests people's familiarity with the rules. He said he is in favor of two categories.

Terry Bounds responded to Bob Baggett's concern about DEQ resources by saying that the community colleges would take on testing and administration of the certification program.

Martin Loring said that this is an encouraging possibility, but that there is no concrete proposal on the table and any DEQ cost has to come out of existing fee for service revenues, "robbing Peter to pay Paul". The Committee was also reminded of Bruce's faxed suggestion to move the compliance deadline out to 1999 to allow the Department another opportunity to budget for a certification program.

Cliff Porter said that there is clearly an issue with the installers who have worked hard to develop a certification program. He just doesn't know the answer to how to implement it without resources.

Bob Baggett suggested that we put a date on it in the rule. Don't put a requirement on the Department unless we have the political will and resources to do it.

Sherman Olson offered that the deadline should not be July 1, 1999, but January 1, 2000 to allow legislative action on DEQ's budget to be completed before the certification deadline.

Warren ? mentioned that he is also a licensed journeyman plumber. They all have a continuing education program and don't renew a license without that. If we want to do something, do it with classes not testing.

Cliff Porter talked about Stan's Lane County program to allow greater latitude with inspections as a carrot. Carrots work better than sticks, and maybe with a lot of baby steps we can get there, he added.

Terry Bounds responded that if you are a certified installer in Missouri, you only are inspected 25% of the time which is a great carrot.

Stan Petrasek asked the committee members to decide on testing requirements, whether to modify or get rid of it.

Bob Rapp of the Homebuilders Association commented that it has been a long time since he had been on a committee where DEQ has said, "I can't do more and have to do less". He found that encouraging. Part of the solution is to look at what we can do and what we can't. DEQ has said they don't think they can do testing. With the minimal information he has been provided, if we don't have the resources to do it, get rid of it. A five year renewal is also better than a three year renewal if we don't have resources.

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Cliff Porter responded, when I say shelve it, I say eliminate testing. However, O2WA has worked their buts off in the past two years to bring along this issue. What can we give to them?

Stan Petrasek reported that he is coming to the same conclusion. We should probably delay the requirement to be tested to be licensed. DEQ should be looking for a different type of mechanism for certification and licensing for the 1999-2001 biennium. Testing or education, maybe not require them, but they should do it. We ought not write a rule requiring something without regard to resources, but at the same time should do something (training, etc.)

John Smits asked if requiring membership in a recognized organization or certified education by July 1, 1999 would work.

Stan Petrasek responded that he didn't think that was readily available throughout the state. Umpqua would be O.K. but what about Lakeview?

Alex Mauck said, lets work on the direction of reducing inspections. He likes certification because that is the first step to get there. He also wants to see more enforcement to take care of the illegal dumpers.

Bob Paeth offered that he is in favor of accepting PSA testing and requirements. Don't test people who pump chemical toilets and holding tanks (who can pump inground tanks, if they have a large enough tank). Installers have to know basic things and what the rules require.

Stan Petrasek agreed that he is in favor of requiring testing of installers and pumpers of septic tanks.

Larry Brown of DEQ's Eastern Region mentioned that his worst installers have gotten the best scores on the test. Every one passing does not know what he is doing.

Lou? of Oregon City said that taking portable toilet people out of the requirement is good, but that pumpers need training, not testing. Testing of installers is O.K.

Stan Petrasek asked if there were any concrete proposals?

Cliff Porter said that he has to back DEQ and go with fiscal responsibility by undoing the testing requirement at this time. *He moved to shelve it by undoing the certification and testing requirement, but keeping license categories.* He added that we should work on a committee to get certification, testing and training where we want it to go in the long run.

Dan Haldeman seconded the motion.

Under discussion, Mike Madson said he agrees with excluding pumpers (which would include both portable toilet and septic tank pumpers), but not installers.

Bob Paeth agreed that installers need to know the rules.

The motion failed three votes to six with Cliff Porter, Bob Rapp and Dan Haldeman voting "yes". Stan Petrasek, Mike Madson, Alex Mauck, Terry Bounds John Smits, and Bob Paeth voted "no".

Bob Paeth moved that certification and testing be eliminated for pumpers and that the compliance deadline for installers be extended to July 1, 1999 with recertification required after five years.

Cliff Porter seconded the motion.

After discussion, the certification deadline for installers was changed to January 1, 2000 by friendly amendment and concurrence of the maker and seconder of the motion.

The motion passed on an eight to one vote, with Dan Haldeman voting "no".

4) Conditions Associated With Saturation

Bijan Pour, DEQ, provided a hand-out and explained why new rule language for conditions associated with saturation is necessary. The primary purpose is to up-date the language to correspond better with current soil science and soil taxonomy by changing the terminology from *mottling* to *redoximorphic features*. Further, improvements to the existing terminology is necessary since the term redoximorphic features is used by the USDA's Soil Conservation Service (now know as the National Resource Conservation Service or NRCS).

Craig Costello, DEQ, presented a paper prepared by Larry Brown of DEQ. Their concerns deal with the eastern part of the state where soils may not show morphological evidence of saturation (pumice soils) in spite of the sustained presence of groundwater. Therefore they proposed that DEQ develop other field criteria that can be used in the Eastern Region for evaluating soils. In addition, it was suggested that time or duration of water tables be considered a factor in applying soil field indicators. The paper substantiated several supportive documents including criteria used by wetland delineators such as hydrophytic vegetation, hydrology, etc.

Bob Paeth, Consultant, explained a situation where a site was denied based on actual free water observed in the test pit. The site did not show evidence of mottling but because water was observed in the pit it was denied. Two weeks later the pit was dry even in the auger hole below the pit bottom. This soil was considered to be deep and well drained. Bob's point was to not base the evaluation on a single observation of free water in pit since the water could be from run-off, a heavy down-pour or from the large pores within the soil and not be related to ground water table. Water table observations using piezometers may not reflect true ground water table levels. He also mentioned that during the recent heavy rains most of the Class 1 Willamette and Woodburn soils have standing water. If we didn't allow development based on this observation, you wouldn't be able to build anywhere in the Willamette Valley.

Herb Huddleston of Oregon State University also commented on this topic, suggesting that perhaps we should not be discussing rules but guidelines instead. Rules written to interpret soils can not be used consistently through out the state in every situation encountered. There will always be exceptions. Using common sense and best professional judgment by observing landscape position, geomorphology, stratigraphy and hydrology helps to reach a proper conclusion in each case.

Other issues related to *Conditions Associated with Saturation* that need attention include the following: 1) where is ground water, 2) what is ground water and 3) how do we define where ground water is. We need to be very careful using simple observations of where water is found in a pit as the only criteria for evaluation. Issue really relates to not how high the water table is, but how long of a duration will water be present at that level. This would allow for possible situations where, during peak rainfall events, drainfields would be under water but without causing a wide spread health hazard. Low chromas in soil indicate where it's saturated long enough to affect performance of system. The concept of redoximorphic features does not show the highest level of the water table but rather the level at which soil remains saturated long enough so that evidence of iron reduction occurs.

For a Dayton soil it takes about three months of continuous saturation before redoximorphic potentials drop to the point that iron is reduced. Situations occur where we have sites that do not represent current hydrology (relic mottling) and as such the rules do not address this issue. Therefore, it comes back to continued training and using best professional judgment in application of rules and guidelines.

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Bob Paeth suggested changing chromas to less than "3" instead of "2" or less. Chromas less than 2 were used mostly to identify hydric soils in the eastern part of the United States, he added. Northwest soils may be saturated with chromas greater than "2". We also need to look at the issue of temporary water verses permanent water, he concluded.

Stan Petrasek mentioned that a hard and fast rule may not be the way to go. Rather, use guide lines for specific regions.

5) Adjournment

Stan Petrasek noted that the alloted time had .passed and adjourned the meeting at 3:00 pm. Discussion and resolution of conditions associated with saturation and sand filter rules will be on agenda for the next meeting, Tuesday, January 21, 1997.

DEQ On-Site Rules Advisory Committee Meeting Minutes of January 21, 1997

Committee Members Present: Dan Haldeman Stan Petrasek Cliff Porter Bruce Phillips, Chairman Michael Madsen Terry Bounds Bob Paeth Alex Mauck John Smits Ron Miner Bob Rapp

DEQ Staff: Martin Loring Robert Baggett Dewey Darold Sherm Olson Craig Costello

Chairman Phillips called the meeting to order with introductions.

Chairman asked Committee for comments /corrections to January 8, 1997 minutes. Cliff Porter requested clarification the final motion would reflect three category distinctions be Pumpers, Combination Pumpers/Septic, and Installers. The other issue Cliff Porter requested be added is that pumping records be maintained with the company records and not submitted to the Department, and would be maintained for three years by the company and available for possible DEQ inspection.

Committee member Robert Paeth requested that on page 6 of the minutes he not be put on record that Woodburn soils were Class 1 soils, and indicated that was an inaccurate statement of record. Class 1 and Woodburn soils would eliminate the problem. Paeth also added it is an outdated classification system. There were no other objections/ corrections.

Other issues: Cliff Porter advised that he would be unable to attend the February 5, 1997 meeting. He requested that the issue regarding Holding Tanks if at all possible be held from the agenda, if the topic was not covered at this meeting. Porter has been contacted by many individuals regarding the Holding Tank issue and would like to have

considerable input into this item. The Chair indicated that there are still several items on the topic list that have not been discussed, and that perhaps scheduling additional Page 2

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future meetings to address all topics. Chairman Phillips indicated that there are several housekeeping items that DEQ would be preparing language for, however this is still on the agencies agenda. Martin Loring, recanted to the Committee the element of timing discussed at the first Advisory meeting. The number of issues that the committee had resolved by February 5, 1997, would be the only amendments the Department would be able to go through the Public Hearing process, and make the June 1997 EQC meeting. It does not mean the Committee cannot continue on with other resolutions and present them to the EQC at a later date. The Departments main concern was the certification testing rule would not be amended in time for the next licensing period. Any other issues we get decided by February 5, 1997 will be included in the June EQC report. The housekeeping items will be brought to the committee as discussed.

The additional critical item is the current set of fees. The fees that are in the rules are not the fees that get charged. Even though the fees were approved by the EQC, the legislature in 1995 deemed the fees to high and rolled the fees back. As a result of the rules indicating a higher fee rate it causes confusion with the Counties, as some follow the fees indicated in the rule. We don't have a request going to the legislature to change the fees for this session. Rules obtained through the Secretary of State, or by going online the statue reflects the higher fee rate adopted by the EQC. The Agency has recommended to the governor the higher fee rate, and the governor said no to fee increase. As a result, the counties have to justify to excess fee's collected. A vote was taken to accept the fees set by the legislation to reflect the actual fees being charged. All in favor, no nays.

The Committee discussed several options as to how the original fee structure could be placed back into the rules, so the program could run adequately. Dan Halderman will write-up a report on the fees and will present at the next meeting. No further discussion on this topic until the February 5 meeting.

SOIL SATURATION

Bijan Pour, DEQ Soil Scientist presented to the Committee his proposed recommendations to revise the present rule 340-71-100 Definitions (28) "Conditions Associated With Saturation". The discussion brought up various technical interpretations of labeling the various water tables throughout the State, and how each county may have differing criteria in doing site evaluations. A lengthy educational discussion amongst soil scientists, committee members representing the counties, and DEQ Regional Staff, Terry Bounds proposed a Technical Sub-Committee be formed involving soil scientists and other science tech. prepare a proposed recommendation and then bring their findings, and proposal, and present to the current On-Site Committee for final approval. Some individuals suggested for the Technical Sub-Committee include Steve Wert; Bob Paeth; Bijan Pour; Bill Doak; Jerry Simonson. It was discussed that the

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possibility of this sub-committee meet and re-submit their findings by February 5, was overly optimistic. The rule making process was reiterated to the members, and the Department will ask the previously recommended participants, plus other soil scientists working in the field. Chairman Phillips asked for concurrence that DEQ will develop this committee and return to either the current Advisory Committee, or another Committee for approval

SAND FILTER RULE

(Rule #????)

A lot of confused discussion on the interpretation of the proposed rule changes and how the proposed rule interacts with other On-Site Rules, and the understanding of Temporary or Permanent Water Table. Chairman Phillips summed up the discussion that Dewey Darold and Sherm Olson knows the appropriate language as to how the Committee members think the rule should read, without reiterating the discussed language.

It was asked to be put on record a statement to Sherm Olson that there is no documented state in the nation that allows any type of water table to come into direct contact with a disposal trench. Sherm agreed with that statement.

Holding Tanks

The Committee wants to address the requirements for portable holding tanks at temporary sites. Sherm Olson brought up the issue the Department has been dealing with for the past six years, with a tank maker has been making and selling tanks for construction sites. The tanks are smaller in design criteria than the Administrative Rule definition of a holding tank, and therefore are not permitted. The Department wants the Committee to advise how these need to be addressed.

Cliff Porter discussed that these smaller holding tanks are not just unique to Oregon, but are manufactured across the nation. His opinion is that the Department drop any attempt to permit these above ground holding tanks. There is an economic reason as to why they are chosen and used, as they are very expensive to pump. Since they are above ground, and in the event of an environmental hazard it would be evident, and would be reported.

However, without permits there is no revenue for individuals to regulate the small holding tanks. Currently OSHA is visiting the sites where these holding tanks are being used.

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On Site Advisory Committee Meeting

February 5, 1997

Members Present Bruce Phillips, Chairman Bob Rapp Robert C. Paeth John Smits Michael Ebeling Stanley Petrasek Michael Madson Terry Bounds Ron Miner DEO Staff Present Paul Heberling Sherm Olson Dewey Darold Robert Baggett Martin Loring Dennis Illingsworth Anne Cox

Others Present

Don Sherwood, Roto- Rooter, Eugene Steve Satter, Roto-Rooter, Salem Dave Martin, OHD Eric Pippid, OHD Sandy Miller, N.W. Sanitation

Chair called the meeting to order with reviewing the minutes of the January 27, 1997 meeting. Comments relating to those minutes that are inaccurate are as follows: Sand Filter Rule, a vote was taken to not accept the rule language that was proposed. A consensus around the table that everyone felt that it was not a problem for the trench to enter the water table (Dan Haldeman, had wanted a six inch cushion from the water table.) Comments from Terry Bounds reflected that six inches on a temporary basis, plus the Sand Filter rule only pertains to pretreated sand filter effluent, not standard. John Smits, added that the minutes did not reflect that he volunteered to be part of the Technical Committee on saturation, to represent a Sanitarian perspective. With these corrections to the previous minutes, all committee members voted to accept the minutes.

Holding Tanks

The discussion began with the topic brought up at the previous meeting by Cliff Porter, discussed that these smaller holding tanks are not unique to Oregon, but are manufactured across the nation. His opinion that if the Department was to drop the use of these holding tanks, it would be more economically costly to pump, and in the event of an environmental hazard, it would be evident and would be reported and action would be

Page 2 February 5, 1997 On-Site Committee Meeting

taken for cleanup. Permits and revenue for enforcement need to be addressed as a major issue. Chair Phillips opened this topic for discussion.

A handout of OSHA Regulations was distributed, and Chair requested open discussion. The City of Portland, Mike Ebeling addressed how the City is handling these holding tanks. When notification of a job-site is submitted, a copy of the contract is requested along with the requirement that a licensed pumper is hired to maintain the holding tanks, and it goes with the Permit issued by the City. In the event the holding tank is not taken care of, the City can go and enforce the removal, and cite any, and all party's privy to this contract.

Sherm Olson distributed to the Committee a handout of proposed rule changes for Holding Tanks. Terry Bounds suggested that the group go down the list and address each item independently, and Chair Phillips agreed that a discussion was possible for this meeting, but final decisions on the rule revisions may not come out of this meeting. He further suggested they are are other members sitting in on this meeting that may want to assist in suggested language at a later time.

The Chair set aside the discussion of proposed rule amendments on Holding Tanks to accommodate time for the representatives from the Health Division who attended to discuss mobile fuel food units (4b) proposed rule revisions. The holding tanks the Health Division deals with are possibly maximum 50 gallon holding tanks. It does not always deal with holding tanks, but could be different formulations. Health Division has regulated, but current rules require the units be permitted, and that they move as needed to dump the waste, however, this is not happening. What is needed is to reference the Health Division rules with the DEQ waste disposal rules. A motion was made to accept the draft as presented by DEQ. Another Committee member seconded the motion.

Terry Bounds requested that under (3) wording needs change from Holding Tank to container. Chair asked if all agreed to the revision, and all concurred on that change.

Chair asked if all committee members accepted these few changes to the rules, all members voted in favor, and did not request further discussion.

Next item up for discussion is Item B, Tank Placement, (you shall be in compliance with all local building and health department requirements). All agreed with wording suggested.

Item C, some discussion relating to Industrial Wastes, and it cannot be assumed what is being dumped into the holding tank. Testing is done when the tank is taken to the dumping facility. Since it follows the rest of the rules as far as on-site disposal, and that

Page 3 February 5, 1997 On-Site Committee Meeting

not all waste is taken to a treatment plant. The rules may be redundant for treatment plants, but not for all other dumping sites. No further discussion of Item C.

Item D, Tanks shall be maintained to not cause Health Hazards or nuisances. Discussion entailed the cleanliness of the holding tanks, in transporting, disposing, and dumping. Generally, early in this discussion members accepted no change in the wording, however there was additional discussion of exactly what is cleanliness. There was no final agreement after the discussion to accept the revised wording, and therefore the early acceptance of this rule will be accepted for the record.

Item E, Tanks shall be placed at ground surface, and not buried. Structures of these tanks are not constructed to be buried. No further discussion, language accepted.

Item F, Use of this tank to serve a dwelling, recreational vehicle or any other structure for overnight accommodation's is strictly prohibited. Comments, violates planning rules, not just DEQ. Discussion ranged from having a security guard, to use the statement on a case by case basis. There were many comments on the wording of this rule, and the Chair suggested that they move on, and address this issue at a later date.

Item G, Tank shall be the following standards, tank should be water tight. Suggested that more language that the overflow not be the lowest part of the structure.

Tank capacity should not be less than 200 gallons, or more than 500 gallons. Discussion surrounding the various sizes of potable tanks that run from 50gal. To 1,000 gal. tanks. Suggested language is to use the wording on a case by case basis, and leave the 500 gallon maximum. The impact is on non-permitted above ground holding tanks, and it's raw sewage that would be leaking. Chair indicated that the 1,000 gallon tanks sounded reasonable, and said that language would be used.

Stan Petrasek suggested that to make things simpler combine C & D, by saying the tanks shall be sound and durable, and made of non-corrosive material. Other suggestions would be to have the company's tanks show the name and phone numbers on the holding tanks.

Chair, would like to bring in some additional individuals for input into further topics for discussion. Department again discussed their deadline date for getting the rules revised to meet the June Environmental Quality Commission. A follow-up meeting in Salem is scheduled for February 20, 1997.

Unclear on tape recording which Item is being addressed.

On-Site Advisory Committee February 20, 1997

<u>Committee Members; Department Staff ; General Public Attended</u>: Sandy Miller of NWS; Roy C. Lumber of Schulz Clearwater; Don Sherwood of Roto-Rooter; Cliff Porter of NW San; Dan Haldeman of Deschutes Co.; Robert C. Paeth Consultant; Bob Rapp of ABIA; Alex Mauck of AMSS; Paul Hebering of DEQ; Martin Loring,Mgr. Of DEQ Community Assistance Program; Greg Farrell of DEQ; Robert Baggett of DEQ; Sherm Olson of DEQ, ; Chairman Bruce Phillips of Cascade Phillips Co.; Michael Madison of Pioneer CM Inc.; Michael Eboling of City of Portland; Terry Bounds of Orenco Systems; Ron Miner of OSU Extenson; Homer , Chris & Carol Rhodaback of Best Pots Inc.; Stanley E. Petrasek of Lane County.

The Chairman opened the meeting with introductions, asking that each would not just give them their name, but to also share the type of business they may own.

After the introductions . To date committee members asked for amendment and reviewed each OAR 340-71-600.

Suggestion that Section two list them as Installer; and pumper, .

Carol Rhodaback commented with , how this will this change.

The pumpers want the extra alarm added for keeping the mechancics brief.

Remainder of the rules, the Committee agreed that the primary concern.

Word Verbiage 340-60 was voted and agreed upon . A problem is with the ones that attempts to take the tests, and receiving a good issue.

They are very concerned how the state will prepare the time during a audit. There is very many aspects as to how DEQ will be doing these inspections, just as if DEQ hired a contract for On-Site Inspections.

Cliff Porter brought up that anyone who would want to continue. Majority voted to have the minutes left , until the next called meeting.

ATTACHMENT G

State of Oregon DEPARTMENT OF ENVIRONMENTAL QUALITY

Rulemaking Proposal for Amendments to the On-Site Sewage Disposal Rules

Rule Implementation Plan

Summary of the Proposed Rules

Amendments making a total of 19 changes to the on-site program rules: 17 changes in Divisions 71 and two changes in Division 73 of Oregon Administrative Rule Chapter 340 are proposed as part of this permanent rulemaking. The text of each change is included in Attachment A. The following is a summary of each change.

- 1. **340-71-100(88):** Definition of "medium sand" was deleted, with portions added to the definition for "sand filter media", and all the following definitions were re-numbered.
- 2. 340-71-100(115): Clarify the definition of "residential strength wastewater".
- **3. 340-71-100(116):** Language from 100(88) and 295(3) was incorporated into "sand filter media" definition.
- 4. 340-71-120: Delete language allowing agreement counties to adopt requirements by ordinance.
- **5. 340-71-130:** Add language to operating permit requirements for WPCF permits that groups systems together on a single parcel of land for the purpose of determining whether design flow indicate that a WPCF or Construction/Installation permit is warranted.
- 6. 340-71-140: Reduction of all on-site fees listed in rule to reflect the 30% rollback mandated by the 1995 Legislature.
- 7. **340-71-162:** Add "community systems" to the list of rules which do not apply to WPCF applicants or permittees.
- 8. 340-71-205: Add language that if re-connecting to an existing on-site sewage disposal system, an authorization notice is required.

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ATTACHMENT G

- **9. 340-71-220:** Include additional for dosing septic tanks regarding cover design and nominal diameter of the riser.
- **10. 340-71-295:** Remove language regarding number of orifices required in a sand filter based on six square feet of sand surface area. Add language allowing the use of a threaded end cap or plug as an option to the use of a valve at the end of each lateral.
- **11. 340-71-315:** Add language requiring field collection tile trench to be a minimum of 12 inches wide to enable it to meet slope requirements.
- **12. 340-71-425:** Add language increasing the years of experience a person must have to qualify for appointment as a special variance officer.
- **13. 340-71-440:** Modify language to make it clear that only appeals of variance approvals are heard by the Environmental Quality Commission.
- 14. 340-71-500: Remove language that duplicates material already covered in 340-71-162.
- **15. 340-71-520:** Remove language regarding construction requirements and technical experience requirements to do plans and specifications. Add language indicating which persons can provide a written assessment on large systems.
- **16. 340-71-600:** Modify on-site certification requirements to do three things: a) exempt septic tank pumping businesses, portable sanitation businesses, and their employees from on-site certification requirements, and b) limit the employees of septic system installers who must be certified to those who supervise or are responsible for the installation of systems, and c) extend the deadline for compliance with certification requirements to January 1, 2000.
- 17. 340-71-605: Remove implementation date of rule modifications already in effect.
- **18. 340-73-055:** Add language allowing flexibility in determining what design methods may be used to protect pumps from suspended solids. Language is also added to clarify that only dosing tanks are subject to the one-third storage volume requirement. Language is removed that prevents the use of a screen if the dosing assembly is preceded by a tank with an effluent filter.
- **19. 340-73-090:** Remove language specifying an effective date for rule amendments already in effect.

ATTACHMENT G

Proposed Effective Date of the Rule

If the EQC approves this rulemaking proposal on June 5, 1997, a copy will be filed with the Secretary of State office. The rule will become effective upon filing, which should be within a week of the EQC meeting.

Proposal for Notification of Affected Persons

All sewage disposal service license holders, each DEQ field office, and each agreement (i.e. contract county) office will be notified by a memorandum describing the rule amendments and when they will become effective.

Proposed Implementing Actions

Implementation will occur within each DEQ office and agreement office by applying the rule amendments associated with each type of application.

Proposed Training/Assistance Actions

If this rules are adopted by the EQC, specifically OAR 340-71-600, we will continue to schedule and support voluntary testing as best we can within available resources. Wallet size cards will be developed and issued for people passing the test. Guidance for regional staff and the industry will be prepared on what the Department intends to do in this area. Staff will also continue to provide refresher training courses for people taking the test. A policy package will also be developed for consideration in the next budget cycle requesting the staffing and other resources necessary to property implement an on-site certification program.

Revisions to Agenda Item E

Temporary Rule Adoption: On-Site Holding Tank Temporary Rule

Note: The <u>underlined</u> portion of text represent proposed additions to the rule. The *[bracketed]* portion of text represents proposed deletions to the rule.

Amend OAR 340-71-340 as follows:

340-71-340 HOLDING TANKS.

- (1) Criteria for Approval. Except as provided in section (5) of this rule, a holding tank requires a WPCF Permit. A WPCF permit for a holding tank may be authorized by the Department on sites that meet all the following conditions:
 - (a) Permanent Use:
 - (A) The site cannot be approved for installation of a standard subsurface system; and
 - (B) No community or area-wide sewerage system is available or expected to be available within five (5) years; and
 - (C) The tank is intended to serve a small industrial or commercial building, or an occasional use facility such as a county fair or a rodeo; and
 - (D) Unless otherwise allowed by the Department, the projected daily sewage flow is not more than two hundred (200) gallons; and
 - (E) Setbacks as required for septic tanks can be met.
 - (b) Temporary Use: In an area under the control of a city or other legal entity authorized to construct, operate, and maintain a community or area-wide sewerage system, a holding tank may be installed provided the application for permit includes a copy of a legal commitment from the legal entity that within five (5) years from the date of the application the legal entity will extend to the property covered by the application a community or area-wide sewerage system meeting the requirements of the Commission, and provided further that the proposed holding tank will otherwise comply with the requirements of these rules.
- (2) Design and Construction Requirements. Except as provided in section (5) of this rule, holding tanks shall comply with the following:
 - (a) Plans and specifications for each holding tank proposed to be installed shall be submitted to the Department for review and approval;

1

- (b) Each tank shall have a minimum liquid capacity of fifteen hundred (1,500) gallons;
- (c) Each tank shall:
 - (A) Comply with standards for tanks contained in OAR 340-73-025;
 - (B) Be located and designed to facilitate removal of contents by pumping;
 - (C) Be equipped with both an audible and visual alarm, placed in a location acceptable to the Department, to indicate when the tank is seventy-five (75) percent full. The audible alarm only may be user cancelable;
 - (D) Have no overflow vent at an elevation lower than the overflow level of the lowest fixture served;
 - (E) Be designed for antibuoyancy if test hole examination or other observations indicate seasonally high groundwater may float the tank when empty.
- (3) Special Requirements. The application for a WPCF permit shall contain:
 - (a) A copy of a contract with a licensed sewage disposal service company which shows the tank will be pumped periodically, at regular intervals or as needed, and the contents disposed of in a manner and at a facility approved by the Department;
 - (b) Evidence that the owner or operator of the proposed disposal facility will accept the pumpings for treatment and disposal.
- (4) Inspection Requirements. Each holding tank regulated through a WPCF permit may be inspected periodically. An annual compliance determination fee in accordance with the fee schedule in OAR 340-71-140 shall be charged.
 - NOTE: Standard operating procedure for the Department is to bill Annual Compliance Determination fees for each Water Pollution Control Facilities (WPCF) operating permit near July 1st of each year. For holding tanks operated under WPCF general permits, this billing will be deferred 180 days from July 1, 1997. During the deferral period, the Department will undertake a review of holding tank regulation with the intent of proposing any permanent rule amendments needed to improve regulatory efficiency and effectiveness.

2

- (5) Portable holding tanks may be temporarily placed at sites having limited duration events (such as but not limited to county fairs or construction projects), provided the following requirements are met:
 - (a) They shall be owned and serviced by a licensed sewage disposal service business with sewage pumping equipment having not less than a 550 gallon tank, while also meeting all other requirements in OAR 340-71-600(10);
 - (b) Tank placement and use shall be in compliance with all local planning, building, and health requirements;
 - (c) Only domestic sewage shall be discharged into the tank. Industrial wastewater, and wastewater containing heavy metals (including but not limited to copper, cadmium and zinc) shall not be discharged into the tank;
 - (d) The tank shall be maintained in a sanitary manner so as not to cause a health hazard or nuisance;
 - (e) The tank shall not be buried;
 - (f) Use of this tank to serve a dwelling, recreation vehicle, or any other structure having sleeping accommodations is strictly prohibited.
 Notwithstanding this prohibition, a portable holding tank may be used temporarily to serve a contractor's job shack or night watchman's trailer;
 - (g) The tank shall meet the following standards:
 - (A) The tank shall be water-tight, with no overflow vent lower than the overflow level of the lowest fixture served;
 - (B) Tank capacity shall not exceed 1,000 gallons unless otherwise authorized by the agent;
 - (C) The tank shall be structurally sound, and be made of durable noncorrosive materials;
 - (D) The tank shall be designed and constructed to provide a secure and water-tight connection of the building sewer pipe.
 - (E) The tank shall be marked with the name and phone number of the licensed sewage disposal service responsible for maintaining the tank.

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ATTACHMENT B

STATEMENT OF NEED AND JUSTIFICATION

Before the Environmental Quality Commission

In the matter of:

Temporary Rule Changing Regulation of Holding Tanks Used as Alternative On-site Sewage Disposal Systems

- Statutory Authority, Statement of Need, Principal Documents Relied Upon and Statement of
 - Justification

1. Citation of statutory authority:

ORS 468.065 authorizes the Commission to establish a schedule of fees for permits, and provides that fees for a permit issued under 468B.050 may be imposed on an annual basis.

2. Need for the rules:

Holding tanks are used to serve the domestic waste needs of rural businesses where the flows are small and a standard on-site sewage disposal system may not be allowed. Pumping costs make this an expensive and uncommon waste disposal option. In 1995, the Department requiring operating permits for holding tanks and annual compliance fees, with the idea that annual inspections would be conducted for all holding tanks. Hundreds of holding tanks are thought to exist, but only 130 businesses using holding tanks have applied for annual operating permits.

Public comments have been received that the Department should consider more effective and efficient ways to regulate inspect and charge fees for holding tanks. The Department has agreed to under take such a review. While that review is taking place, the Department proposes to defer billing of invoices for annual compliance determination fees.

3. Documents relied upon:

The Department reviewed the regulations in response to concerns raised by owners of holding tanks in Southern Oregon and concluded that a change was needed prior to this year's billing cycle.

4. Justification of temporary rules:

Annual Compliance Determination Fees are due by July 1st of each year. Inadequate time exists to use the normal rulemaking process to change the way inspection fees are charged for holding tanks in time for it to be effective with the July 1, 1997 billings. Failure to defer billing of invoices prior to July 1, 1997 will result in serious prejudice to the current permit holders.

5. Housing Cost Impact Statement:

The Department has determined that this rule change will not affect the cost of development of a 6,000 square foot parcel and the construction of a 1,200 square foot detached single family dwelling on that parcel. The rule being changed affects commercial facilities-

Augan M. Asico Signature

Environmental Quality Commission

- I Rule Adoption Item
- □ Action Item
- □ Information Item

Agenda Item E.2. June 5, 1997 Meeting

Title:

TEMPORARY RULE CHANGING REGULATION OF HOLDING TANKS USED AS ALTERNATIVE ON-SITE SEWAGE DISPOSAL SYSTEMS

Summary:

Holding tanks are a type of alternative on-site sewage disposal system used by some rural businesses to handle small domestic wastewater flows where a standard on-site sewage disposal systems is not allowed. Pumping costs make holding tanks an expensive waste disposal option.

For years, holding tanks were regulated through on-site construction-installation permits issued by the the Department or counties. Annual inspections were required but seldom done, and a compliance inspection fee was sometimes charged. In 1995, the Department began to require operating permits for all holding tanks and annual compliance determination fees, with the idea that all holding tanks would be inspected annually. The deadline to obtain an operating permit for an existing tank was April 1, 1996. Though the number of holding tanks is estimated to run into the hundreds, to date only 130 holding tank users have applied for an operating permit.

Based on comments and concerns that have been raised in Southern Oregon, the Department has decided that a thorough review of the way that holding tanks are regulated is needed to determine if the current approach is the most efficient and effective option available. While this review is underway, the Department proposes adoption of a temporary rule to defer billing the annual compliance determination fee that would ordinarily go out early in July of 1997.

Department Recommendation:

The Department recommends that the Commission approve the temporary rule as presented in Attachment A of this report to defer for 180 days the billing of 1997 Annual Compliance Determination fee for people operating holding tanks on WPCF permits.

Nallock Stophan MADirbotar Division Administrator ort Author

Date:	June 5, 1997
То:	Environmental Quality Commission
From:	Langdon Marsh
Subject:	Agenda Item E.2., On-site Holding Tank Temporary Rule, EQC Meeting, June 5, 1997

Background

As part of a public hearing process on permanent rule amendments proposed for the on-site sewage disposal rules, two comment letters were received dealing with matters not discussed by the On-site Rules Technical Advisory Committee and not included in the public notice or fiscal impact statement prepared for that rulemaking proposal. The Department feels that the issues raised in the letters have merit.

Advice from counsel was sought as to whether these new rule issues may be dealt with in the permanent rulemaking proposal. Counsel advised not to include new issues in the permanent rule presented for consideration by the Commission at its June 5th meeting because doing so would violate state agency procedures for public notice and opportunity to comment.

Some of the new issues raised are not urgent and can wait until a future permanent rulemaking to be addressed without harm. They will be added to the list of issues for consideration by a subsequent advisory committee. However, the Department is convinced that one of the issues raised should be dealt with sooner than this approach would allow to cure perceived inequities in the way fees are charged to one type of permittee.

The permit type is Water Pollution Control Facilities (WPCF) General Permit number 5400. It has been issued to 130 businesses using holding tanks for disposal of domestic waste which have complied with a 1995 rule change directing them to obtain an operating permit. The issue raised is how the Department regulates holding tanks, including who inspects them and fees that are charged.

The Department has decided to respond through a temporary rule. Because of the merit and urgency of the arguments made, the Department recommends that the Commission consider a temporary rule to resolve the issue.

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

Agenda Item E.2., On-site Holding Tank Temporary Rule, EQC Meeting, June 5, 1997 Page 2

The following sections summarize the issue that this proposed temporary rule is intended to address, the relationship to federal and adjacent state rules, authority to address the issue, the process for developing the rulemaking proposal including alternatives considered, a summary of the rulemaking proposal presented for public hearing, a summary of the significant public comments and the changes proposed in response to those comments, a summary of how the rule will work and how it is proposed to be implemented, and a recommendation for Commission action.

Issue this Proposed Rulemaking Action is Intended to Address

Permanent holding tanks are a type of alternate on-site sewage disposal system used by some rural businesses to handle small domestic wastewater flows where a standard on-site sewage disposal system is not allowed. Pumping costs make holding tanks an expensive and relatively rare waste disposal option.

Holding tanks have been regulated through issuance of on-site construction-installation permits by the Department and contract agents. Inspections were conducted as resources allowed and compliance fees were charged when an inspection was actually done. Few inspections were performed and when they were, fees were hard to collect.

Responding to these difficulties and a perception that public health interests require periodic inspection of holding tanks, the on-site rules were changed in 1995 to require operating permits for holding tanks and payment of an annual compliance fee. The intent was for the fees to cover the aggregate cost of conducting periodic inspections and taking any necessary enforcement action.

It is not known how many holding tanks are in use, but the estimate runs into the hundreds. To date, only 130 businesses using holding tanks have applied for the operating permit known as Water Pollution Control Facility (WPCF) General Permit Number 5400.

The central issue raised by the Josephine County Commissioners is that the Department should be open to allowing more efficient and effective ways to get inspections done. The Department agrees.

The Department will work with a Technical Advisory Committee to review options to regulate, inspect and charge fees to holding tanks. It is also proposed to defer by temporary rule invoicing of the \$200, 1997 annual compliance determination fee in the interest of fairness to the regulated community while this review is taking place.

Agenda Item E.2., On-site Holding Tank Temporary Rule, EQC Meeting, June 5, 1997 Page 3

Relationship to Federal and Adjacent State Rules

There is no relationship between this proposal and federal rules. It does complement the rest of state law and rule pertaining to the on-site sewage disposal program, protection of public health, and protection of water quality.

Authority to Address the Issue

ORS 454.625 and ORS 468.020 confer upon the Commission broad authority to adopt rules necessary to protect the quality of public waters of the state, public health and the general welfare. ORS 469.065 authorizes the Commission to establish a schedule of fees for permits, and provides that fees for a permit issued under 468B.050 may be imposed on an annual basis.

<u>Process for Development of the Rulemaking Proposal (including Advisory Committee and alternatives considered)</u>

This temporary rule proposal was not discussed by the Technical Advisory Committee involved in the permanent on-site rulemaking proposal. This proposal came out of the Department's review of the on-site regulations in response to concerns raised by owners of holding tanks and local government officials in Southern Oregon. Alternatives considered include the following:

- 1) Delaying consideration of the regulation and inspection of holding tanks until a subsequent, permanent on-site rulemaking,
- 2) Changing the method of regulating holding tanks,
- 3) Changing the requirement for an annual compliance determination fee to be charged, and
- 4) Changing the rule to allow private inspections to meet the compliance requirement.

Each of the above options introduced complexity that could not be properly dealt with in this proposal. In fact, the issue of holding tank regulation proved too complicated to resolve substantively in the short time available for the preparation of this temporary rule proposal. Even though it was decided to take the substantive issue up with an advisory committee, it seemed proper to also defer invoicing of annual compliance determination fees until the issue of how to regulate holding tanks can be revisited.

Agenda Item E.2., On-site Holding Tank Temporary Rule, EQC Meeting, June 5, 1997 Page 4

Summary of Rulemaking Proposal Presented for Public Hearing and Discussion of Significant Issues Involved.

No public hearing was held on the temporary rule proposal to change how the Department regulates permanent holding tanks.

Summary of Significant Public Comment and Changes Proposed in Response

No public hearing was held on the temporary rule proposal, and no comments have been received on the proposal. However, the comments received on this issue in response to the permanent on-site rule amendment public notice are as follows:

- 1) The Josephine County Board of Commissioners suggested that instead of using Department staff to inspect holding tanks, the Department should maintain a registry of holding tanks with inspections performed by qualified local people.
- 2) Permitted users of holding tanks in the Merlin area of Josephine County commented that it is not fair to charge an annual compliance determination fee for holding tanks that are not been inspected by Department staff since the requirement took effect.

In response to this input, the Department has decided to review with the Technical Advisory Committee how holding tanks should be regulated, inspected and charged fees. While this review is going on, the Department feels it proper to defer billing of 1997 invoices for the \$200 annual compliance determination fee that is scheduled to be sent to each of the 130 holding tanks regulated by WPCF General Permit number 5400 on July 1st.

Summary of How the Proposed Rule Will Work and How it Will be Implemented

If this temporary rule proposal is approved by the Commission, no annual compliance determination fee (ACD) invoices will be sent to the 130 businesses which have been assigned holding tank WPCF general permit number 5400 when the rest of the ACD fee invoices are mailed July 1, 1997. Instead, the fee invoices will be held, unmailed for 180 days until late December to allow time for the technical advisory to complete its review of holding tank regulation and forward a permanent rule recommendation. If no changes are made to the permanent holding tank rule, the invoices will be mailed in late December of 1997. If permanent rule revisions are made to the holding tank rules, the 1997 the ACD fees may or may not be invoiced depending on the nature of the change approved.

Agenda Item E.2., On-site Holding Tank Temporary Rule, EQC Meeting, June 5, 1997 Page 5

Recommendation for Commission Action

It is recommended that the Commission adopt the temporary rule amendment deferring for 180 days the billing of Annual Compliance Determination fee invoices for holding tanks regulated by WPCF General Permit 5400 as presented in Attachment A of the Department Staff Report.

Attachments

- A. Rule (Amendments) Proposed for Adoption
- B. Statement of Need and Justification
- C. Written Comment received from the Josephine County Board of Commissioners

Reference Documents (available upon request)

A. List of 130 businesses which have taken an assignment of WPCF General Permit Number 5400.

Approved:

Section:

Division:

Report Prepared By: Martin W. Loring

Phone: (503) 229-5415

Date Prepared: May 19, 1997

340-71-340 HOLDING TANKS.

ATTACHMENT A

- (1) Criteria for Approval. A holding tank requires a WPCF Permit. A WPCF permit for a holding tank may be authorized by the Agent for holding tanks on sites that meet all the following conditions:
 - (a) Permanent Use:
 - (A) The site cannot be approved for installation of a standard subsurface system; and
 - (B) No community or area-wide sewerage system is available or expected to be available within five (5) years; and
 - (C) The tank is intended to serve a small industrial or commercial building, or an occasional use facility such as a county fair or a rodeo; and
 - (D) Unless otherwise allowed by the Department, the projected daily sewage flow is not more than two hundred (200) gallons; and
 - (E) Setbacks as required for septic tanks can be met.
 - (b) Temporary Use:
 - (A) In an area under the control of a city or other legal entity authorized to construct, operate, and maintain a community or area-wide sewerage system, a holding tank may be installed provided the application for permit includes a copy of a legal commitment from the legal entity that within five (5) years from the date of the application the legal entity will extend to the property covered by the application a community or area-wide sewerage system meeting the requirements of the Commission, and provided further that the proposed holding tank will otherwise comply with the requirements of these rules; or
 - (B) The tank is to serve a temporary construction site.

(2) General:

- (a) No building may be served by more than one (1) holding tank;
- (b) A single tax lot may be served by no more than one (1) holding tank unless the holding tanks are under control of a municipality as defined in Oregon Revised Statutes;
- (3) Design and Construction Requirements:

- (a) Plans and specifications for each holding tank proposed to be installed shall be submitted to the Agent for review and approval;
- (b) Each tank shall have a minimum liquid capacity of fifteen hundred (1,500) gallons;
- (c) Each tank shall:
 - (A) Comply with standards for septic tanks contained in OAR 340-73-025;
 - (B) Be located and designed to facilitate removal of contents by pumping;
 - (C) Be equipped with both an audible and visual alarm, placed in a location acceptable to the Agent, to indicate when the tank is seventy-five (75) percent full. The audible alarm only may be user cancelable;
 - (D) Have no overflow vent at an elevation lower than the overflow level of the lowest fixture served;
 - (E) Be designed for antibuoyancy if test hole examination or other observations indicate seasonally high groundwater may float the tank when empty.
- (4) Special Requirements. The application for permit shall contain:
 - (a) A copy of a contract with a licensed sewage disposal service company which shows the tank will be pumped periodically, at regular intervals or as needed, and the contents disposed of in a manner and at a facility approved by the Department;
 - (b) Evidence that the owner or operator of the proposed disposal facility will accept the pumpings for treatment and disposal.
- (5) Inspection Requirements. Each holding tank may be inspected annually. An annual compliance determination fee in accordance with the fee schedule in OAR 340-71-140 shall be charged.

NOTE: Standard operating procedure for the Department is to bill Annual Compliance Determination fees for each Water Pollution Control Facilities (WPCF) operating permit near July 1st of each year. For holding tanks operated under WPCF general permits, this billing will be deferred 180 days from July 1, 1997. During the deferral period, the Department will undertake a review of holding tank regulation with the intent of proposing any permanent rule amendments needed to improve regulatory efficiency and effectiveness.

ATTACHMENT B

STATEMENT OF NEED AND JUSTIFICATION

Before the Environmental Quality Commission

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In the matter of:

Temporary Rule Changing Regulation of Holding Tanks) Used as Alternative On-site Sewage Disposal Systems)

Statutory Authority, Statement of Need, Principal Documents Relied Upon and Statement of Justification

1. Citation of statutory authority:

ORS 468.065 authorizes the Commission to establish a schedule of fees for permits, and provides that fees for a permit issued under 468B.050 may be imposed on an annual basis.

2. Need for the rules:

Holding tanks are used to serve the domestic waste needs of rural businesses where the flows are small and a standard on-site sewage disposal system may not be allowed. Pumping costs make this an expensive and uncommon waste disposal option. In 1995, the Department requiring operating permits for holding tanks and annual compliance fees, with the idea that annual inspections would be conducted for all holding tanks. Hundreds of holding tanks are thought to exist, but only 130 businesses using holding tanks have applied for annual operating permits.

Public comments have been received that the Department should consider more effective and efficient ways to regulate inspect and charge fees for holding tanks. The Department has agreed to under take such a review. While that review is taking place, the Department proposes to defer billing of invoices for annual compliance determination fees.

3. Documents relied upon:

The Department reviewed the regulations in response to concerns raised by owners of holding tanks in Southern Oregon and concluded that a change was needed prior to this year's billing cycle.

4. Justification of temporary rules:

Annual Compliance Determination Fees are due by July 1st of each year. Inadequate time exists to use the normal rulemaking process to change the way inspection fees are charged for holding tanks in time for it to be effective with the July 1, 1997 billings.

5. Housing Cost Impact Statement:

The Department has determined that this rule change will not affect the cost of development of a 6,000 square foot parcel and the construction of a 1,200 square foot detached single family dwelling on that parcel. The rule being changed affects commercial facilities.

-20-97 Date

<u>trohanne Hallock</u> Signature



JOSEPHINE COUNTY OREGON

500 N.W. 6th Street Grants Pass, OR 97526 541-474-5221 541-474-5105 (fax) 1-800-735-2900

ATTACHMENT C

Board of Commissioners Fred Borngasser Jim Brock Harold L. Haugen

February 12, 1997

Langdon Marsh Director DEPARTMENT OF ENVIRONMENTAL QUALITY 811 SW Sixth Avenue Portland, OR 97204-1390 FFR 1 9 1997

State of Oregon Department of Environmental Quality

OFFICE OF THE DIRECTOR

Dear Mr. Marsh,

In a recent meeting in Merlin a suggestion on handling holding tank certification came up. The suggestions is simple: DEQ maintain registration of the tanks and license qualified people in the community to conduct inspections. The hope, of course, is to reduce the present cost of the program that is very high, especially for small business.

We appreciate having your staff consider this as an alternative to the present system.

Sincerely,

JOSEPHINE COUNTY BOARD OF COMMISSIONERS Fred Borngasser, Chair Vice Chai rock. Harold L. Haugen, Commissioner

BCC/h

cc: Senator Brady Adams Representative Bob Repine Senator Bill Fisher Representative Bill Markham Ed Dickenson Del REnfro Gwen Bowman Steve Greenwood Greg Farrell Chuck Costanzo Michael Downs

Environmental Quality Commission

Rule Adoption Item

Action Item

Information Item

Agenda Item <u>F</u> June :, 1997 Meeting

1

Title:

Proposed modification of OAR 340-41-120(12) Effluent Limitations for Bacteria, to allow reduced monitoring for bacteria for smaller sewage treatment plants.

Summary:

The Department believes that the bacteria in-stream standard monitoring requirement of a monthly log mean of a minimum of five samples was inadvertently applied to the effluent limit portion of the bacteria standard. The Department has historically utilized a monitoring matrix for determining monitoring frequencies in permits which considers both the size and type of sewage treatment facility and does not believe that the rule intended to change this approach.

The Department also believes that imposing additional monitoring requirements on small treatment facilities imposes added costs that are not needed and that proper operation of these smaller facilities is verified by other means.

This rule change will allow the Department to continue to use the monitoring matrix in setting monitoring requirements in permits and will remove the mandatory five sample requirement

Department Recommendation:

It is recommended that the Commission adopt the rule amendments regarding bacterial effluent limitations as presented in Attachment A of the Department's Staff Report.

Stephan Hallock BHELTOF MUL Report Author **Division Administrator**

7 Jun 97

State of Oregon Department of Environmental Quality Memorandum

Date:	May 15, 1997
То:	Environmental Quality Commission
From:	Langdon Marsh
Subject:	Agenda Item F, Proposed modification of OAR 340-41-120(12)Effluent Limitations for Bacteria, to allow reduced monitoring for bacteria for smaller sewage treatment plants, EQC Meeting June 6. 1997

Background

On March 14, 1997, the Director authorized the Water Quality Division to proceed to a rulemaking hearing on proposed rules which would amend OAR 340-41-120(12) Effluent Limitations for Bacteria. The amendment would eliminate the requirement that compliance with the bacteria effluent limitations be based upon a minimum of five samples per month. In addition, the current rule requires resampling to occur when the single sample limitation is exceeded. The proposed rule would allow resampling to be optional. Should a permittee decide not to resample, a single sample exceedance would constitute a permit violation.

Pursuant to the authorization, hearing notice was published in the Secretary of State's <u>Bulletin</u> on April 1, 1997. The Hearing Notice and informational materials were mailed on March 14, 1997, to a mailing list of those persons who have asked to be notified of rulemaking actions, and to a mailing list of persons known by the Department to be potentially affected by or interested in the proposed rulemaking action.

A Public Hearing was held May 1, 1997 with Mr. Dick Nichols serving as Presiding Officer. Only one person (Janet Gillaspie, Executive Director of the Oregon Association of Clean Water Agencies [ACWA]) attended the hearing providing a letter of support for the rule change, but making no oral comment. Written comment was accepted through the close of business of May 2, 1997. Other than the letter submitted at the hearing, no written comments were received. In lieu of preparing a Presiding Officer's Report, the one letter of comment is attached as Attachment C.

Department staff evaluated the one written letter received. The letter fully supports the proposed rule change as it was placed on public notice. Therefore, the Department is proposing that the EQC adopt the rule modification without change.

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

Agenda Item F, Proposed modification of OAR 340-41-120(12) Effluent Limitations for Bacteria Page 2

The following sections summarize the issue that this proposed rulemaking action is intended to address, the authority to address the issue, the process for development of the rulemaking proposal including alternatives considered, a summary of the rulemaking proposal presented for public hearing, a summary of the significant public comments and the changes proposed in response to those comments, a summary of how the rule will work and how it is proposed to be implemented, and a recommendation for Commission action.

Issue this Proposed Rulemaking Action is Intended to Address

The Department proposes to change the effluent limitation portion of the bacterial standard to delete the wording "based upon a minimum of five samples." Monitoring frequencies will be established in the permit from an existing guidance document that considers plant type and size. Without this change, the effluent limitation portion of the bacterial standard will force all sewage treatment plants that are covered by NPDES waste discharge permits, regardless of size and type, to monitor a minimum of 5 times per month.

In addition, the existing rule mandates resampling any time the permittee exceeds the single sample limitation. This proposed rule would allow resampling as an option if the permittee wishes to avoid a permit violation. For smaller facilities, particularly those in remote regions of the state, resampling as provided in the existing rule is a significant burden.

Relationship to Federal and Adjacent State Rules

For NPDES permits, federal regulations [40CFR, part 122.48] require sufficient monitoring of effluent quality to assure the data is representative of the effluent. The federal rules, however, specify no minimum frequency for any specific parameter.

Authority to Address the Issue

ORS 468B.048 provides the EQC with the authority to set water quality standards. ORS 468B.030 provides the EQC with authority by rule to set effluent limitations and other minimum requirements. The Department proposes to modify OAR 340-41-120(11) which was originally adopted pursuant to ORS468B.048.

Agenda Item F, Proposed modification of OAR 340-41-120(12) Effluent Limitations for Bacteria Page 3

<u>Process for Development of the Rulemaking Proposal (including Advisory Committee and alternatives considered)</u>

The Department believes this proposed rule change is basically a house-keeping matter. No advisory committee was impaneled to deal with the issue. The Department did contact ACWA and Nina Bell of Northwest Environmental Advocates about this proposal and did not receive any objections.

The no action alternative is one option. The Department believes that the extra monitoring as required by the current rule will needlessly burden many of the smaller cities because of added costs and because it is not really needed.

The rule could be changed to require two or three samples per month instead of five. The Department believes, however, that the determination of the proper number of samples can be better defined with more flexibility in guidance. The Department currently has a monitoring matrix for determining monitoring frequencies in permits. This matrix considers both the size and type of sewage treatment plant.

Summary of Rulemaking Proposal Presented for Public Hearing and Discussion of Significant Issues Involved.

In January, 1996, the Environmental Quality Commission adopted new water quality standards for bacteria. The new bacteria standard contains numeric criteria that is based upon a monthly log mean of a minimum of five samples. With the adoption of this new standard, the EQC also adopted a rule establishing effluent limitations for bacteria. The numeric values for the effluent limits are identical to the numeric values of the in-stream standard.

During the development of the bacteria standard, DEQ staff agreed that the in-stream standard should be based upon a minimum number of data points; relative to effluent limits, however, no minimum number of data points were proposed. Field staff believed that, for smaller sewage treatment plants, monitoring of other parameters (total chlorine residual concentrations) would provide reasonable assurance of proper disinfection to meet the bacteria limits at a reasonable cost.

In the days just prior to adoption of the standards by the EQC, several changes to the draft rule were made. Most were made to accommodate concerns of various parties with the proposed standards. Inadvertently, the effluent limits portion of the new standards were changed to include a requirement that the monthly log mean be based upon a minimum of five samples. DEQ field staff and the owners of small sewerage facilities were unaware of this change until after the Commission had adopted the rules.

Agenda Item F, Proposed modification of OAR 340-41-120(12) Effluent Limitations for Bacteria Page 4

DEQ believes that it is not necessary for smaller sewage treatment facilities to collect five bacteria samples every month. Many smaller plants collect only one each month. Proper operation of a disinfection system is usually based upon surrogate parameters such as total chlorine residual that can be instantaneously monitored whereas bacteria results, at best, will not be known for 48 hours. In addition, the costs of collecting, shipping, and analyzing bacteria samples, although not a great deal of money, is a significant factor for small cities.

Summary of Significant Public Comment and Changes Proposed in Response

Only one comment, in full support of the proposed rule, was received. No changes to the proposed rule is recommend from that which went to public notice.

Summary of How the Proposed Rule Will Work and How it Will be Implemented

The guidance for establishing monitoring frequencies is already established. Permit writers currently are familiar with it and use it on a regular basis. If the rule is changed, bacteria monitoring frequencies will be determined in permits with the use of guidance and will not necessarily be set at a minimum of five per month. In addition, if a permittee exceeds a single sample limitation and decides not to resample, the exceedance will be determed a violation of the permit and the Department will issue a Notice of Noncompliance or other appropriate enforcement.

Agenda Item F, Proposed modification of OAR 340-410120(12) Effluent Limitations for Bacteria Page 5

Recommendation for Commission Action

It is recommended that the Commission adopt the rule amendments regarding bacteria effluent limitations as presented in Attachment A of the Department Staff Report.

Attachments

- A. Rule (Amendments) Proposed for Adoption
- B. Supporting Procedural Documentation:
 - 1. Legal Notice of Hearing
 - 2. Fiscal and Economic Impact Statement
 - 3. Land Use Evaluation Statement
 - 4. Questions to be Answered to Reveal Potential Justification for Differing from Federal Requirements
 - 5. Cover Memorandum from Public Notice
- C. Written Comment from ACWA.

Approved:

Section:

Division:

Report Prepared By: Richard J. Nichols, WQ -Bend

Phone: (541) 388-6146, X251

Date Prepared: May 6, 1997

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Attachment A.

340-41-120

(12) Effluent Limitations for Bacteria: Except as allowed in subsection (c) of this section, upon NPDES permit renewal or issuance, or upon request for a permit modification by the permittee at an earlier date, effluent discharges to freshwaters, and estuarine waters other than shellfish growing waters shall not exceed a monthly log mean of 126 *E. coli* organisms per 100 ml based on a minimum of five (5) samples. No single sample shall exceed 406 *E. coli* organisms per 100 ml. *However, no violation will be* found If-a single sample exceeds 406 *E. coli* per 100 ml, for an exceedance if the permittee takes at least then five consecutive re-samples shall be taken at four-hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample was taken- and If the log mean of the five re-samples is less than or equal to 126 *E. coli*, a violation shall not occur. The following conditions apply:

(c) For sewage treatment plants that are authorized to use reclaimed water pursuant to OAR Chapter 340, Division 55, and which also use a storage pond as a means to dechlorinate their effluent prior to discharge to public waters, effluent limitations for bacteria shall, upon request by the permittee, be based upon appropriate total coliform, limits as required by OAR Chapter 340, Division 55:

(A) For Level II limitations, if <u>no</u> two consecutive samples <u>shall</u> exceed 240 total coliform per 100 ml or <u>and</u> for Level III and Level IV limitations, if a <u>no</u> single sample <u>shall</u> exceeds 23 total coliform per 100 ml₇. <u>However, no violation</u> <u>will be found for an exceedance under this paragraph if the permittee takes at</u> <u>least</u> then five consecutive re-samples shall be taken at four hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample(s) were taken; and

(B) If- in the case of Level II effluent, the log mean of the five re-samples is less than or equal to 23 total coliform per 100 ml or, in the case of Level III and IV effluent, if the log mean of the five re-samples is less than or equal to 2.2 total coliform per 100 ml, a violation shall not be triggered.

PPD\WC14\WC14575.doc

ATTACHMENT B-1

NOTICE OF PROPOSED RULEMAKING HEARING

Department of Environmental Quality

Water Quality Division

OAR Chapter 340-41

DATE:

LOCATION:

May 1, 1997 **HEARINGS OFFICER(s):** 1:00 p.m. Conference Room 3A, 811 SW 6th, Portland OR **Dick Nichols**

STATUTORY AUTHORITY: ORS 468B.035; 468.020 or OTHER AUTHORITY: STATUTES IMPLEMENTED: ORS 468B,030

TIME:

ADOPT:

AMEND: 340-41-120

REPEAL:

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Х

RENUMBER: (prior approval from Secretary of State REQUIRED)

AMEND & RENUMBER:

(prior approval from Secretary of State REQUIRED)

This hearing notice is the initial notice given for this rulemaking action.

This hearing was requested by interested persons after a previous rulemaking notice.

Auxiliary aids for persons with disabilities are available upon advance request.

SUMMARY: In January 1996, the EQC adopted new water quality standards for bacteria along with a rule establishing effluent limitations for bacteria. During the development of the standard, staff agreed that the instream standard should be based upon a minimum number of data points, relative to effluent limits, however, no minimum number of data points were proposed. In the days just prior to adoption, numerous changes to the rules were made. Inadvertently, the effluent limits portion of the new standards were changed to include a requirement that the monthly mean be based upon a minimum of five samples. Staff and owners of sewerage facilities were unaware of this change until after the adoption of the rules. This rule change will correct the inadvertent error.

LAST DATE FOR COMMENT: May 2, 1997

AGENCY RULES COORDINATOR: AGENCY CONTACT FOR THIS PROPOSAL: ADDRESS:

Susan M. Greco, (503) 229-5213 **Dick Nichols** 2146 N.E. 4th Avenue Bend OR 97701 (541) 388-6146 x251/1-800-452-4011

TELEPHONE:

Interested persons may comment on the proposed rules orally or in writing at the hearing. Written comments will also be considered if received by the date indicated above.

12/97

Signature

State of Oregon DEPARTMENT OF ENVIRONMENTAL QUALITY

Rulemaking Proposal

for

Proposed modification of OAR 340-41-120(12) Effluent Limitations for Bacteria to allow reduced monitoring for bacteria for smaller sewage treatment plants.

Fiscal and Economic Impact Statement

Introduction

This proposed rule will eliminate the requirement that all sewage treatment plants operating under an NPDES permit monitor for bacteria a minimum of five times each month in order to verify compliance with bacteria effluent limits. For some sewage treatment plants, this will reduce their monitoring costs by over \$100 per month.

General Public

People whose homes are served by a community sewerage facility pay monthly user fees to pay for the operation of the sewerage facility. This proposed rule, for some smaller sewage treatment plants, will reduce the cost of monitoring for bacteria and, in turn, the amount of monthly fees required to operate the plant. [It should be noted that the current rule, which this proposal will revise, has probably not yet impacted users fees. Therefore, adoption of this rule revision would likely likely prevent fee increases rather than result in a reduction in user fees.]

Small Business

People whose businesses are served by a community sewerage facility pay monthly user fees to pay for the operation of the sewerage facility. This proposed rule, for some smaller sewage treatment plants, will reduce the cost of monitoring for bacteria and, in turn, the amount of monthly fees required to operate the plant. [It should be noted that the current rule, which this proposal will revise, has probably not yet impacted users fees. Therefore, adoption of this rule revision would likely likely prevent fee increases rather than result in a reduction in user fees.]

Large Business

Large business are served by a community sewerage facility pay monthly user fees to pay for the operation of the sewerage facility. This proposed rule, for some smaller sewage treatment plants, will reduce the cost of monitoring for bacteria and, in turn, the amount of monthly fees required to operate

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the plant. Some larger business may operate their own sewage treatment plant, in which case, their costs for operating the treatment plant may be reduced depending on the size of the treatment plant.

Local Governments

Local governments that operate sewage treatment plants may have reduced monitoring requirements which will reduce their costs to operate the sewage treatment plant.

State Agencies

- DEQ

- FTE's No change.
- Revenues No change.
- Expenses No change.

- Other Agencies If another agency, like State Parks, has a sewage treatment plant operating under an NPDES waste discharge permit, its costs for monitoring will likely be less depending upon the size of the treatment plant.

Assumptions

By federal rule, sewage treatment plants that discharge wastewater into surface waters of the state must monitor the quality of their effluent to ensure compliance with effluent limits. Traditionally, monitoring requirements (parameters, frequencies, etc.) have been based, in part, upon the size of the facility. Smaller facilities are required to monitor less frequently. When the current bacteria standard was adopted in January 1996, the rule inadvertently required a minimum of five samples every month regardless of size. This proposed rule will again allow DEQ to set monitoring frequencies based upon size and type the facility.

Cost savings resulting from this proposed rule depends upon a lot of things. Large plants will likely continue to monitor a minimum of five times a month. Smaller plants will do much less; some down to once/month. Some plants, particularly the large plants have laboratory facilities and do their own analyses. Others, including the smaller plants, send their samples to laboratories. Bacteria samples cannot be stored for more than 30 hours before laboratory processes begin. This sometimes requires the sample to be delivered to the lab the same day it is collected. Some are shipped by UPS or other form of commercial transport if the 30 hour limit can be met.

The following table will demonstrate a case where this rule will save a small plant a maximum cost per month:

Activity	<u>5 times per month</u>	Once per month
Collection (1/4 hour @ \$15/hour)	\$18.75	\$ 3.75
Transport (\$5 by UPS)	\$25.00	\$ 5.00
Analysis cost (\$15 per sample)	<u>\$75.00</u>	<u>\$15.00</u>
Total	\$118.75	\$23.75

Resulting monthly savings for this case is: \$95.00. For other plants that may be larger, the cost savings will be less.

Housing Cost Impact Statement

The Department has determined that this proposed rulemaking will have no effect on the cost of development of a 6,000 square foot parcel and the construction of a 1,200 square foot detached single family dwelling on that parcel.

State of Oregon DEPARTMENT OF ENVIRONMENTAL QUALITY

Rulemaking Proposal

for

Proposed modification of OAR 340-41-120(12) Effluent Limitations for Bacteria to allow reduced monitoring for bacteria for smaller sewage treatment plants.

Land Use Evaluation Statement

1. In January, 1996, the Environmental Quality Commission adopted new water quality standards for bacteria. The new bacteria standard contains numeric criteria that is based upon a monthly log mean of a minimum of five samples. With the adoption of this new standard, the EQC also adopted a rule establishing effluent limitations for bacteria. The numeric values for the effluent limits are identical to the numeric values of the in-stream standard.

During the development of the bacteria standard, DEQ staff agreed that the in-stream standard should be based upon a minimum number of data points; relative to effluent limits, however, no minimum number of data points were proposed. Field staff believed that, for smaller sewage treatment plants, monitoring of other parameters (total chlorine residual concentrations) would provide reasonable assurance of proper disinfection to meet the bacteria limits at a reasonable cost.

In the days just prior to adoption of the standards by the EQC, several changes to the draft rule were made. Most were made to accommodate concerns of various parties with the proposed standards. Inadvertently, the effluent limits portion of the new standards were changed to include a requirement that the monthly geometric mean be based upon a minimum of five samples. DEQ field staff and the owners of small sewerage facilities were unaware of this change until after the Commission had adopted the rules.

The Department proposes to change the effluent limitation portion of the bacterial standard to delete the wording "based upon a minimum of five samples." Monitoring frequencies will be established in the permit from an existing guidance document that considers plant type and size. 2. Do the proposed rules affect existing rules, programs or activities that are considered land use programs in the DEQ State Agency Coordination (SAC) Program?

a. If yes, identify existing program/rule/activity:

National Pollutant Discharge Elimination System (NPDES) Water Pollution Control Facilities permitting system (WPCF)

NPDES and WPCF permitting programs require land use compatibility statements (LUCS) for all new sources. The LUCS must be sent in before the Department can initiate review of engineering plans and specifications.

b. If yes, do the existing statewide goal compliance and local plan compatibility procedures adequately cover the proposed rules?

Yes X No (if no, explain):

c. If no, apply the following criteria to the proposed rules.

In the space below, state if the proposed rules are considered programs affecting land use. State the criteria and reasons for the determination.

3. If the proposed rules have been determined a land use program under 2. above, but are not subject to existing land use compliance and compatibility procedures, explain the new procedures the Department will use to ensure compliance and compatibility.

planitallock

Intergovernmental Coord

Questions to be Answered to Reveal Potential Justification for Differing from Federal Requirements.

In January, 1996, the Environmental Quality Commission adopted new water quality standards for bacteria. The new bacteria standard contains numeric criteria that is based upon a monthly log mean of a minimum of five samples. With the adoption of this new standard, the EQC also adopted a rule establishing effluent limitations for bacteria. The numeric values for the effluent limits are identical to the numeric values of the in-stream standard.

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In the days just prior to adoption of the standards by the EQC, several changes to the draft rule were made. Most were made to accommodate concerns of various parties with the proposed standards. Inadvertently, the effluent limits portion of the new standards were changed to include a requirement that the monthly geometric mean be based upon a minimum of five samples. DEQ field staff and the owners of small sewerage facilities were unaware of this change until after the Commission had adopted the rules.

DEQ believes that it is not necessary for smaller sewage treatment facilities to collect five bacteria samples every month. Many smaller plants collect only one each month. Proper operation of a disinfection system is usually based upon surrogate parameters such as total chlorine residual that can be instantaneously monitored whereas bacteria results, at best, will not be known for 48 hours. In addition, the costs of collecting, shipping, and analyzing bacteria samples, although is not a great deal of money, is a significant factor for small cities.

The Department proposes to change the effluent limitation portion of the bacterial standard to delete the wording "based upon a minimum of five samples." Monitoring frequencies will be established in the permit from an existing guidance document that considers plant type and size.

1. Are there federal requirements that are applicable to this situation? If so, exactly what are they?

40CFR, Part 122.48 requires that all NPDES waste discharge permits shall specify required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring. Federal regulations, however, have no specific, minimum monitoring frequency for a given parameter.

2. Are the applicable federal requirements performance based, technology based, or both with the most stringent controlling?

The applicable federal requirement for monitoring applies to permits and is neither performance-based not technology-based.

3. Do the applicable federal requirements specifically address the issues that are of concern in Oregon? Was data or information that would reasonably reflect Oregon's concern and situation considered in the federal process that established the federal requirements?

Specific monitoring frequencies for bacteria or any other parameter are not established in federal rule. This proposed rule intends to eliminate specific monitoring requirements for bacteria that was inadvertently included in the in-stream bacteria standard when it was adopted.

4. Will the proposed requirement improve the ability of the regulated community to comply in a more cost effective way by clarifying confusing or potentially conflicting requirements (within or cross-media), increasing certainty, or preventing or reducing the need for costly retrofit to meet more stringent requirements later?

It will reduce the cost to smaller sewage treatment plants for monitoring bacteria levels in their effluent.

5. Is there a timing issue which might justify changing the time frame for implementation of federal requirements?

Not applicable. The current rule needs to be changed as soon as practicable so that permits being renewed for small sewage treatment plants do not have to contain requirements for monitoring bacteria five times each month in order to verify compliance with effluent limits.

6. Will the proposed requirement assist in establishing and maintaining a reasonable margin for accommodation of uncertainty and future growth?

Not applicable to this proposed rule change. It will not affect future growth.

7. Does the proposed requirement establish or maintain reasonable equity in the requirements for various sources? (level the playing field)

The current rule requires all sewage treatment plants operating under an NPDES permit to monitor at the same frequency for bacteria. The Department believes that small treatment plants should not be required to monitor at the same frequency as large plants because the quantity of effluent is less and small plants do not have the resources to do such monitoring. Smaller sewage treatment plants can effectively monitor the effectiveness of their bacteria disinfection process with other parameters and do not need frequent bacterial monitoring.

8. Would others face increased costs if a more stringent rule is not enacted?

This proposed rule is not more stringent; in fact, it eliminates mandatory monitoring at a specific frequency.

9. Does the proposed requirement include procedural requirements, reporting or monitoring requirements that are different from applicable federal requirements? If so, Why? What is the "compelling reason" for different procedural, reporting or monitoring requirements?

This proposed rule will eliminate monitoring requirements that are more stringent than federal regulations.

10. Is demonstrated technology available to comply with the proposed requirement?

Yes.

11. Will the proposed requirement contribute to the prevention of pollution or address a potential problem and represent a more cost effective environmental gain?

By eliminating specific monitoring requirements, this proposed rule will be more costeffective for smaller sewage treatment plants.

State of Oregon Department of Environmental Quality

Memorandum

Date: March 14, 1997

To: Interested and Affected Public

Subject: Rulemaking Proposal and Rulemaking Statements - Proposed modification of OAR 340-41-120(12) Effluent Limitations for Bacteria to allow reduced monitoring for bacteria for smaller sewage treatment plants.

This memorandum contains information on a proposal by the Department of Environmental Quality (Department) to adopt new rules/rule amendments regarding effluent monitoring for bacteria. Pursuant to ORS 183.335, this memorandum also provides information about the Environmental Quality Commission's (EQC) intended action to adopt a rule.

This proposal would allow reduced monitoring for bacteria for smaller sewage treatment plants. In January, 1996, the Environmental Quality Commission adopted new water quality standards for bacteria. The new bacteria standard contains numeric criteria that are based upon a monthly log mean of a minimum of five samples. With the adoption of this new standard, the EQC also adopted a rule establishing effluent limitations for bacteria. The numeric values for the effluent limits are identical to the numeric values of the in-stream standard.

During the development of the bacteria standard, DEQ staff agreed that the in-stream standard should be based upon a minimum number of data points. Relative to effluent limits, however, no minimum number of data points were proposed. Field staff believed that, for smaller sewage treatment plants, monitoring of other parameters (total chlorine residual concentrations) would provide reasonable assurance of proper disinfecting to meet the bacteria limits at a reasonable cost.

In the days prior to adoption of the standards by the EQC, several changes to the draft rule were made. Most were made to accommodate concerns of various parties with the proposed standards. Inadvertently, the effluent limits portion of the new standards were changed to include a requirement that the monthly geometric mean be based upon a minimum of five samples. DEQ field staff and the owners of small sewerage facilities were unaware of this change until after the Commission had adopted the rules.

DEQ believes that it is not necessary for smaller sewage treatment facilities to collect five bacteria samples every month. Many smaller plants collect only one each month. Proper operation of a disinfecting system is usually based upon surrogate parameters such as total chlorine residual that can be instantaneously monitored whereas bacteria results, at best, will not be known for 48 hours. In addition, the costs of collecting, shipping, and analyzing bacteria samples, although not a great deal of money, is a significant factor for small cities.

The Department proposes to change the effluent limitation portion of the bacterial standard to delete the wording "based upon a minimum of five samples." Monitoring frequencies will be established in Memo To: Interested and Affected Public Proposed Modification of OAR 340-41-120(12) Effluent Limitations for Bacteria Page 2

the permit. When creating the permit, the Department will consider the an existing guidance document that considers plant type and size as follows:

Mechanical Sewage Treatment Plants								
Design Capacity, MGD								
<	<u><0.05</u>	<u>0.05-0.10</u>	0.11-0.50	<u>0.51-1.0</u>	<u>1.01-5.0</u>	<u>5.01-10</u>	>10	
. 1	l/mon.	1/ 2 wks	1/week	1/week	2/week	3/week	3/week	
Lagoon Treatment Facilities								
Design Capacity, MGD								
<	<0.05	0.05-0.10	0.11-0.50	<u>0.51-1.0</u>	1.01-5.0	<u>5.01-10</u>	>10	
1	l/mon.	1/mon.	1/2 weeks	1/week	2/week	3/week	3/week	

The Department has the statutory authority to address this issue under ORS 468B 030 Effluent Limitations and ORS 468B 035 Implementation of Federal Water Pollution Control Act, along with the Department's general authority contained in ORS 468 020.

What's in this Package?

Attachments to this memorandum provide details on the proposal as follows:

Attachment A The official statement describing the fiscal and economic impact of the proposed rule. (required by ORS 183.335)

Attachment B A statement providing assurance that the proposed rules are consistent with statewide land use goals and compatible with local land use plans.

Attachment C Questions to be Answered to Reveal Potential Justification for Differing from Federal Requirements.

Attachment D The actual language of the proposed rule (amendments).

Hearing Process Details

The Department is conducting a public hearing at which comments will be accepted either orally or in writing. Mr. Dick Nichols will be the Presiding Officer at the hearing. The hearing will be held as follows:

Date: May 1, 1997
Time: 1 PM
Place: Room 3A, DEQ Headquarters Building 811 SW 6th Avenue, Portland, OR 97204

Deadline for submittal of Written Comments: May 2, 1997

Memo To: Interested and Affected Public Proposed Modification of OAR 340-41-120(12) Effluent Limitations for Bacteria Page 3

Written comments can be presented at the hearing or to the Department any time prior to the date above. Comments should be sent to: Department of Environmental Quality, Attn: Mr. Dick Nichols, 2146 NE 4th Avenue, Bend, OR 97701

In accordance with ORS 183.335(13), no comments from any party can be accepted after the deadline for submission of comments has passed. Thus if you wish for your comments to be considered by the Department in the development of these rules, your comments must be received prior to the close of the comment period. The Department recommends that comments are submitted as early as possible to allow adequate review and evaluation of the comments submitted.

What Happens After the Public Comment Period Closes

Following close of the public comment period, the Presiding Officer will prepare a report which summarizes the oral testimony presented and identifies written comments submitted. The Environmental Quality Commission (EQC) will receive a copy of the Presiding Officer's report. The public hearing will be tape recorded, but the tape will not be transcribed.

The Department will review and evaluate the rulemaking proposal in light of all information received during the comment period. Following the review, the rules may be presented to the EQC as originally proposed or with modifications made in response to public comments received.

The EQC will consider the Department's recommendation for rule adoption during one of their regularly scheduled public meetings. The targeted meeting date for consideration of this rulemaking proposal is June 6, 1997. This date may be delayed if needed to provide additional time for evaluation and response to testimony received in the hearing process.

You will be notified of the time and place for final EQC action if you present oral testimony at the hearing or submit written comment during the comment period. Otherwise, if you wish to be kept advised of this proceeding, you should request that your name be placed on the mailing list.

Why is there a need for the rule?

This proposed rule is intended to correct an inadvertent error in the effluent limitations for the instream bacteria standard when it was adopted in January, 1996. As it currently reads, the effluent limitations portion of the bacteria standard requires all sewage treatment plants to monitor for bacteria in their effluent a minimum of 5 times each month. For smaller sewage treatment plants, this level of monitoring frequency is unnecessary and financially burdensome. This proposed rule will eliminate a minimum monitoring frequency as part of the bacteria standard. Monitoring frequencies will be established in the permit. When creating the permit, the Department will consider an existing guidance Memo To: Interested and Affected Public Proposed Modification of OAR 340-41-120(12) Effluent Limitations for Bacteria Page 4

document that considers plant type and size.

How was the rule developed

This rule was developed by staff without the use of an advisory committee. An advisory committee was not used since the proposed rule change is a housekeeping measure to correct an error in the rules as adopted. Staff has discussed the issue with interested and affected parties, however.

The Department relied upon the permit guidance manual in drafting these proposed rules. Copies of the documents relied upon in the development of this rulemaking proposal can be reviewed at the Department of Environmental Quality's office at 811 S.W. 6th Avenue, Portland, Oregon. Please contact Ms. Wanda Stovall for times when the documents are available for review.

Whom does this rule affect including the public, regulated community or other agencies, and how does it affect these groups?

It primarily affects small communities and their citizens. If adopted, it will reduce potential monitoring costs for smaller sewage treatment plants and, consequently, users fees paid by citizens whose sewage is treated by the sewage treatment plant. Reduced monitoring for bacteria should not reduce confidence that bacteria discharges are in compliance with effluent limitations or the protection of public waters. Effective disinfecting to ensure bacteria limitations is accomplished through monitoring of the disinfecting agent such as chlorine residual or ultraviolet light intensity.

How will the rule be implemented

If the rule is adopted, monitoring frequency for bacteria will be set in accordance with a monitoring matrix that has already been established in permit writers guidance. This is the same process that is used for establishing monitoring frequencies for all other discharge parameters.

Are there time constraints

Yes. New permits and renewal permits for smaller plants have been delayed pending consideration of this proposed rule.

Contact for more information

If you would like more information on this rulemaking proposal or would like to be added to the mailing list, please contact: Mr. Dick Nichols, Manager, 2146 NE 4th Avenue, Bend, OR, 97701, Telephone No.: (541) 388-6146 X251.



Working with more than 70 community wastewater treatment agencies to protect Oregon's water

April 30, 1997

25 NE 11th Avenue, Suite 200 Portland, Oregon 97232 (503) 236-6722 FAX (503) 236-6719

Department of Environmental Quality Attn: Dick Nicholas 2146 NE 4th Ave. Bend, OR 97701

Proposed Modifications of OAR 340-41-120(12) Effluent Limitation for Bacteria

The following comments on the proposed modifications to OAR 340-41-120(12) Effluent Limitations for Bacteria are submitted by the Oregon Association of Clean Water Agencies (ACWA). ACWA ha a membership of over 70 agencies involved in wastewater treatment and surface water management throughout the State. ACWA members were actively involved in both the Technical and Policy Advisory Committees during the development of the new bacteria rules which were adopted by the Environmental Quality Commission in January 1996.

As indicated in the staff report for the proposed modifications of the rule, due to several last minute revisions, the requirement for a minimum of five samples per month in the effluent limitations portion of the new standard adopted in 1996 was not noticed by ACWA members prior to adoption. This minimum monitoring frequency requirement was not included in either the Technical or Policy Advisory Committee recommendations.

ACWA agrees with the staff report recommendation to delete the wording "based on a minimum of five samples" from the existing rule an make the other clarifying changes outlined in Attachment D of the proposal, and for the Department to use the existing guidance to permit writers which describes the recommended sampling frequency for bacteria based upon wastewater treatment plant capacity. ACWA believes that this frequency of bacteria monitoring, along with other monitoring of disinfection processes, such as residual chlorine, will provide an adequate level of public health protection.

In summary, ACWA supports the proposed modifications to OAR 340-41-120(12) Effluent Limitations for Bacteria.

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Thank you for this opportunity to comment.

Sincerely,

Janet Gillaspie ACWA Executive Director

cc: ACWA Board James Ollerenshaw, Water Quality Chair Peter Ruffier, Chair 984-8606 669-2438

Diane Taniguchi-Dennis, Secretary/Treasurer 588-6380



State of Oregon Department of Environmental Quality

Memorandum

Date: June 5, 1997

То:	Environmenta	l Quálity	Commissioners
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From:

Langdon Marsh MARL

Subject: Director's Report

Llewelyn Is New Water Quality Division Administrator

Mike Llewelyn began his duties as Water Quality Division Administrator on May 12. While he cannot be here today, I want to acknowledge his arrival and tell you how pleased I am that he has chosen to join us.

Mike has been Water Quality Program Manager at the Washington Department of Ecology in Olympia since 1990. He came to Washington after more than ten years in various water quality management positions at the Wisconsin Department of Natural Resources. He holds a Masters Degree in Water Quality Management from the University of Wisconsin.

Mike will be based at DEQ headquarters in Portland, but will work with agency regional administrators, water quality managers and staff statewide to implement DEQ water quality programs. He will be the lead designer of future agency programs to help restore coastal coho salmon and restore water quality to more than 800 waterbodies around the state currently listed as "water quality limited."

He has clearly established himself as a person in command of both regional and national water quality issues. We face tremendous challenges in the years ahead, and I believe Mike will serve DEQ and Oregon well.

Stephanie Hallock has returned to her real job as Eastern Region Administrator, but will continue as lead in the Water Quality Strategic Planning process for now. It has been a long several months for Stephanie. I want to take this opportunity to again express my appreciation for her hard work in the Water Quality Division, and also my thanks to Eastern Region Managers who filled in ably as acting DAs during her interim assignment.

Hyundai Certification Sent to Corps

As you recall, Hyundai America asked last fall for modifications in their original 401 Certification covering their microchip manufacturing facility in Eugene. This week, we sent the Corps of Engineers our final, amended certification that evolved from the original Hyundai request. I believe our changes adequately address the company's desire for clarity of wording and intent while continuing to protect the environment at a very high level. We conducted thorough internal review. Had informal discussions with other affected parties, and fairly considered public comments.

In fact, the revised certification sets guidelines of greater clarity and stringency regarding monitoring of impacts from stormwater runoff at the construction site, and sets a clear standard for unacceptable performance. The Corps enforces compliance with Section 401 conditions. DEQ, however, retains enforcement authority for the state 1200 C stormwater management permit. That permit, which generated past violation penalties, remains unchanged.

Removal Underway For Mine Waste Near Opal Creek

Opal Creek, in the Willamette National Forest, drew considerable public attention in the debate over old-growth forest management. DEQ entered the fray during decision-making on disposal of old mine tailings that threatened water quality within the Opal Creek drainage.

Today, work is in progress to remove toxic materials and preserve that special environment. I applaud the work of DEQ staff for actively working with the U.S. Forest Service and concerned public on this contentious issue. I also honor yet another contribution by retired Oregon senator Mark Hatfield to Oregon's quality of life. Before he left Congress, Senator Hatfield secured additional federal funding that now allows removal of the tailings to suitable permanent storage. Removal should be complete by early to mid July.

Oregon Plan Implementation Underway

DEQ takes its role in salmon recovery and stream restoration very seriously. In April, the Legislator and Governor Kitzhaber approved the Oregon Plan for coho recovery and the Healthy Streams Initiative. This plan provides DEQ with 19 new positions to implement our components of the plan which include development of Total Maximum Daily Load allotments for waterways and help with monitoring Plan performance.

We began recruitment for these positions last month. Final assignments for each job are still under review, but our ultimate aim is to put these new people in the right places to meet plan commitments and public expectation. I will have a full report on these placements when you meet next.

Recovery Planning Efforts Turn to Steelhead

Since March of this year state natural resource agencies have been working together to prepare the steelhead supplement to the Oregon Plan. The supplement will be organized to address fisheries management (harvest and hatcheries), water quality, water quantity and physical habitat issues the Lower Columbia River, Oregon Coast, Klamath Mountains Province, Snake River Basin and Upper Willamette River ESUs to obviate the need for a listing and restore steelhead to productive levels. DEQ has taken the lead for preparation of the water quality chapter of the supplement.

A draft plan should be ready to submit to the National Marine Fisheries Service this month. It is hoped that NMFS will grant itself a six month extension of time to consider their listing decision so that more time is available to improve the conservation plan. Without an extension, NMFS could act as early as this August.

The Governor's Office has also been working with the Governor's Offices of California, Idaho and Washington to secure their agreement to undertake the conservation planning in the shared ESUs in a coordinated fashion.

DEQ has prepared a set of management measures it proposes to implement to improve water quality and help protect and restore steelhead salmon. Some of these measures will require additional resources to implement and DEQ has provided information on the budget implications to the Governor's Office. The next step for the department will be to share information on these management measures with affected stakeholders and to get their thoughts on the adequacy and appropriateness of the measures.

Mixing Zone Rule Amendment Delayed

You will note that the mixing zone rule amendment for point source dischargers is not on the agenda today as originally planned. We have decided to delay action for two reasons. First: The amendment will likely increase workload above levels required under the existing rule. Therefore, waiting until we have a budget and an accurate fix on available staffing seems reasonable. Second: Incorporating comments received during public review will change the amendment enough that additional internal review will be necessary before bringing the matter to you.

401 Certifications for Grazing On Schedule

To date, we have received 62 applications for Forest Service grazing permits which require 401 Certification. This is more than we originally anticipated, and the applications continue to trickle in. So far, we and Department of Agriculture have completed review of 48 applications, and DEQ has issued certifications for each of them. Overall, the working relationship with ODA goes well and processing has not suffered any major delays.

Flow Levels Continue High On Columbia River.

The percentage of flow spilled at the Lower Columbia dams continued at a high level due to river flows, flood control operations, and system management. Spill averaged 67.9%, 34.9%, 64%, and 55.9% of average daily river flow at McNary, John Day, The Dalles, and Bonneville dams, respectively. The mid-Columbia dams continue to spill high volumes of water, mostly in excess of hydraulic capacity.

Most sites report levels of total dissolved gas (TDG) above the state's TDG water quality waiver. The highest levels of TDG measured continue to be in the tailrace of the John Day dam where TDG levels were above 140%. There continues to be a high incidence of gas bubble signs in fish collected at the John Day and Bonneville Dams. The levels of

gas bubble disease signs exceed the action criteria established by the National Marine Fisheries Service for the controlled spill program.

Current considerations for reducing spill could include changes in the present plan for flood control operations or passing more flow through the turbines which could result in increased turbine mortality. There is disagreement between the fisheries managers and the project operators on the amount of flow that should be passed through the power house turbines.

Rogue Workshop Well Received

The Oregon Plan for coho restoration contains several commitments regarding monitoring and assessment. DEQ will play a role in implementing many of those components. The Plan also envisions a high level of volunteer involvement to help carry out those jobs.

DEQ's Rogue Basin Team conducted a water temperature monitoring training workshop earlier this week for local government and watershed council members. About 45 people attended the session held jointly with the Rogue Valley Council of Governments. Rogue Team Leader Gary Arnold expects to hold four additional workshops. Response to this first effort is a good indicator that we are fulfilling a need. Helping people in the community get involved effectively will remain an important part of our job in the coho restoration effort.

Clean Air Action Day Campaign Kicks Off June 16

We begin our annual Clean Air Action Day campaign in the Portland area June 16. This kick off event is designed to make people aware of how their actions affect air quality, and what they can do to reduce impacts on forecast bad air days.

This year's public message will be enhanced by two public service television spots featuring, of all things, car dealers telling people not to drive cars. Six of the most visible (via advertising) car dealers in the Portland area agreed to help shoot two spots which deliver such messages as keep your car properly tuned, combining errands and taking alternative transportation on Clean Air Action Days.

Congratulations to Air Quality and Public Affairs staffs for the creativity and hard work put into this campaign.

Legislative Update

I am not including a written legislative report this time because situations are changing so often that it could be out of date by the time you read it. Therefore, I'll give you a verbal update on several topics and also answer any specific questions you may have. I will discuss VIP privatization, Arlington revenue shortfall, budget and fee bills, alternative temperature standards, sanitarian license exemption for DEQ and the "Green Permits" bill.

Response to Issues Raised at the April 1997 EQC Meeting Regarding General Water Quality Permits.

1. What are the provisions for revoking a specific general permit if a local government land use compatibility statement is challenged or revoked.?

Answer: Oregon Administrative Rules (OAR) Chapter 340, Division 18 establishes the rules for coordinating land use issues with DEQ's programs, rules and actions. These rules require that a Land Use Compatability Statement (LUCS) be submitted along with a DEQ application. DEQ staff reviews the LUCS for completeness and to ensure that there are no potential conflicts between the findings in the LUCS and permit conditions. These rules state that in situations where the LUCS is appealed, the Department shall continue to process the pending action unless otherwise ordered by the Land Use Compatability Board (LUBA) or a court of law stays or invalidates the local action. If a LUCS is successfully appealed after DEQ has issued a permit, DEQ may proceed to revoke or suspend the permit, or may decide to wait until the land use appeals process is exhausted. Typically, if the LUCS is revoked and the appeal process is exhausted, the permit for the activity will no longer be necessary and it would be revoked. The revokation process for WPCF and NPDES permits is outlined in OAR 340-45-060 and applies to general and individual permits.

2. How can a public hearing be granted for a specific general permit?

Answer: DEQ rules provide for public notice and public comment on the development of the general permit. No provision is made for public notice/hearings for assignment of general permits to specific sources. The intended purpose of general permits is to streamline the process and reduce work load for issuing permits for minor sources that have common pollution control requirements.

3. What happens during the time between general permits expiring and being renewed?

Answer: The Water Quality Program has 29 industrial and storm water general permits. 13 are currently issued and 16 are pending renewal. For sources who held general permits which have expired, DEQ rules specify that their existing permit remains in affect until such time as it is replaced by issuance of a renewal permit. For new and expanded sources that need a new general permit, they must wait for issuance of a new general permit or risk being found to be in violation of DEQ rules requiring permits.

4. What is the overall public involvement with general permits?

Answer: Public involvement is essentially limited to commenting on general permits when they are proposed for initial issuance or renewal. This is the time for the public to raise issues about the scope of the sources which would be subject to the general permit and/or the specific provisions of the general permit.