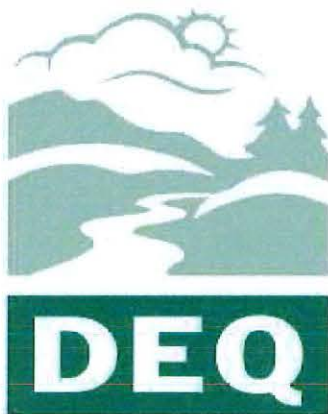


**OREGON  
ENVIRONMENTAL QUALITY  
COMMISSION MEETING  
MATERIALS 07/23/1992**



**State of Oregon  
Department of  
Environmental  
Quality**

This file is digitized in **color** using Optical Character Recognition (OCR) in a standard PDF format.

Standard PDF Creates PDF files to be printed to desktop printers or digital copiers, published on a CD, or sent to client as publishing proof. This set of options uses compression and downsampling to keep the file size down. However, it also embeds subsets of all (allowed) fonts used in the file, converts all colors to sRGB, and prints to a medium resolution. Window font subsets are not embedded by default. PDF files created with this settings file can be opened in Acrobat and Reader versions 6.0 and later.

State of Oregon  
ENVIRONMENTAL QUALITY COMMISSION

**A G E N D A**

**REGULAR MEETING - July 23, 1992**

DEQ Conference Room 3a  
811 S. W. 6th Avenue  
Portland, Oregon  
10:00 a.m.

*Note: 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. Times noted on the agenda are approximate. An effort will be made to consider items with a designated time as close to that time as possible. However, scheduled times may be modified if agreeable with participants. Anyone wishing to be heard or listen to the discussion on any item should arrive at the beginning of the meeting to avoid missing the item of interest.*

10:00 a.m.

- A. Petitions of James River II, Inc., Boise Cascade Corporation, and the City of St. Helens for Reconsideration or Rehearing of the Commission's April 16, 1992, Order in the Appeals of NPDES Permit No. 100716 (James River) and Permit No. 100715 (City of St. Helens).

**Rule Adoptions**

*Hearings have already been held on the Rule Adoption items; therefore any testimony received will be limited to comments on changes proposed by the Department in response to hearing testimony. The Commission also may choose to question interested parties present at the meeting.*

- B. Proposed Adoption of New Rule to Clarify Procedure for Calculating Mass Load Discharge Limits for BOD and Suspended Solids for Domestic Waste NPDES Permits
- C. Proposed Adoption of Rule Amendments to Delay Implementation of the Enterococci Bacteria Standard and Reinstate and Substitute the Fecal Coliform Standard in the Interim
- D. Proposed Adoption of Rule Regarding use of Permit as a Shield Language in NPDES Permits

**Information Items**

- E. Status Report on Voluntary Implementation of Agricultural Activities in the Tualatin Basin
- F. Work Session -- Discussion on Water Quality Status Report [305(b) Report]

---

**REGULAR MEETING - July 24, 1992**

DEQ Conference Room 3a  
811 S. W. 6th Avenue  
Portland, Oregon  
8:30 a.m.

8:30 a.m.

- G. Approval of Minutes
- H. Approval of Tax Credit Applications

**Rule Adoptions**

*Hearings have already been held on the Rule Adoption items; therefore any testimony received will be limited to comments on changes proposed by the Department in response to hearing testimony. The Commission also may choose to question interested parties present at the meeting.*

- I. Proposed Adoption of Amendments to Crematory Incineration Rules

- J. Proposed Adoption of Revision to the Clean Air Act State Implementation Plan: Lane Regional Air Pollution Authority Rule Amendments for Kraft Pulp Mills and Excess Emissions
- K-1 Proposed Adoption of Rules to Update the Visibility Protection Plan
- K-2 Proposed Adoption of Rules to Update the Slash Burning Smoke Management Plan
- L. Proposed Adoption of Amendments to Rules for Enforcement Procedures and Civil Penalties
- M. Proposed Adoption of Rules for Oil Spill Prevention and Emergency Response Contingency Planning (SB 242)

### **Action Items**

- N. Request by City of Prineville for an Exception to the Receiving Stream Dilution Requirement
- O. Request By Unified Sewerage Agency for an Exception to the Receiving Stream Dilution Requirement for the Durham and Rock Creek Wastewater Treatment Facilities

11:30 a.m.

### **P. Public Forum**

*This is an opportunity for citizens to speak to the Commission on environmental issues and concerns not a part of the agenda for this meeting. 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.*

### **Information Items**

- Q. Commission Member Reports (Oral)
- R. Director's Report (Oral)

1:00 p.m.

- S. Status Report by City of Portland on Progress in Implementation of Combined Sewer Overflow Order
- T. Status Report on Bi-State Study on the Columbia River and the Tillamook NEP Designation

*The Commission will meet on August 7, 1992, in Portland to consider adoption of the proposed rules on chemical process mining. The next regular business meeting will be on September 11, 1992, in Eugene.*

*Copies of the staff reports on the 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.*

July 6, 1992

Approved _____
Approved with Corrections _____

*Minutes are not final until approved by the EQC*

## ENVIRONMENTAL QUALITY COMMISSION

Minutes of the Two Hundred and Twentieth Meeting  
April 23, 1992

### Regular Meeting

The Environmental Quality Commission regular meeting was convened at 8:30 a.m. on Thursday, April 23, 1992, in Conference Room 3A, Oregon Department of Environmental Quality (DEQ), 811 S. W. Sixth Avenue in Portland, Oregon. The following commission members were present:

William Wessinger, Chair  
Dr. Emery Castle, Vice Chair  
Henry Lorenzen, Commissioner  
Anne W. Squier, Commissioner  
Carol Whipple, Commissioner

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

**Note:** Staff reports represented at this meeting, which contain the Department's recommendations, are on file in the Office of the Director, DEQ, 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 into the minutes of the meeting by reference.

Chair Wessinger called the meeting to order.

#### A. Approval of the Minutes.

Commissioner Squier moved the March 12, 1992, minutes be approved; Commissioner Castle seconded the motion. The March 12, 1992, minutes were unanimously approved.

**B. Approval of Tax Credits.**

The Department recommended approval of the following tax credit applications.

Application Number	Applicant	Description
TC-3497	Mark & Dean McKay Farms	Grass seed straw storage shed.
TC-3569	Portland General Electric	Oil-water separator and associated drainage piping.
TC-3582	Dinihanian Recycling & Manufacturing	Used single drive tractor; two used Manufacturing trailers for plastic recycling.
TC-3618	Younger Oil Company	UST spill containment barrier and oil/ water separator with fiberglass piping; underground fiberglass piping for above ground tank.
TC-3682	Jeld-Wen, Inc.	Primary filter baghouse.
TC-3688	Berger Brothers	Tiling of 33 acres.
TC-3704	Briggs Farms, Inc.	4 bottom, 18" plow.
TC-3706	Klamath Auto Wreckers	Automobile air conditioner coolant Inc. recycling machine.
TC-3719	Delon Olds Co.	Automobile air conditioner coolant recycling machine.
TC-3720	Delon Olds Co.	Automobile air conditioner coolant recycling machine.
TC-3722	Rex's Garage	Automobile air conditioner coolant recycling machine.
TC-3723	M & G Body and Fender	Automobile air conditioner coolant Service recycling machine.

Environmental Quality Commission Minutes

Page 3

April 23, 1992

Application Number	Applicant	Description
TC-3727	City Automotive	Automobile air conditioner coolant recycling machine.
TC-3729	Larry Launder, Inc., dba Mt. Park Chevron	Automobile air conditioner coolant recycling machine.
TC-3733	Artisan Automotive, Inc.	Automobile air conditioner coolant recycling machine.
TC-3734	Seaside Auto Body	Automobile air conditioner coolant recycling machine.
TC-3735	Oregon Rootstock & Tree Co., Inc.	Two fiberglass USTs with leak detection, spill containment basins, overfill alarms and Stage II vapor recovery piping.
TC-3736	Oregon Rootstock & Tree Co., Inc.	Grass seed straw storage shed.
TC-3742	David R. Briggs	John Deere model 2810 plow.
TC-3743	Small World Auto Center, Inc.	Automobile air conditioner coolant recycling machine.
TC-3744	Small World Auto Center, Inc.	Automobile air conditioner coolant recycling machine.
TC-3745	Small World Auto Center, Inc.	Automobile air conditioner coolant recycling machine.

Commissioner Squier noted that TC 3688 involved field tiling and asked if action on this application was deferred at the last meeting pending further discussion. The Department responded that it was. Director Hansen noted that field tiling is one of the alternatives to open field burning referenced in the rules. Larry Knudsen, Assistant Attorney General, indicated the question raised by the Commission at the last meeting was not whether the field tiling was eligible for certification but whether the field tiling increased property value. Jim Britton, representing the Oregon Department of Agriculture, stated two questions were raised: the potential for increased land value, and the potential for an increased value in the alternative crop

where tiling was used on the land. With respect to crop value, he noted that the grower and county extension agent indicated that potential alternative crops would not have significantly different value. Mike Downs, Administrator of the Environmental Cleanup Division, stated the county assessor had verbally advised the Department that installation of field tile would not alter land value.

Commissioner Castle moved the tax credit applications be approved as recommended by the Department; Commissioner Whipple seconded the motion. The motion was approved with three yes votes. Chair Wessinger and Commissioner Squier abstained because they did not receive the staff report in time to review the material prior to the meeting.

### **RULE ADOPTIONS**

#### **C. Proposed Adoption of Solid Waste Permit Fee Rules.**

The purpose of these rules was to implement increases in solid waste permit fees required by 1991 Senate Bill 66 and by the legislatively approved budget for 1991 through 1993. An additional purpose was to simplify the solid waste permit processing fee schedule. Deanna Mueller-Crispin and Chuck Donaldson, Hazardous and Solid Waste Division, presented this agenda item.

Ms. Mueller-Crispin and Mr. Donaldson provided information about advisory committee representation and involvement, public hearings, additional advisory committee work group review and resulting rule modifications to lower the fees on sites (mostly eastern Oregon solid waste sites). The Commission asked if lessening the fees would encourage many scattered sites. Mr. Donaldson responded that economics and Resource Conservation and Recovery Act (RCRA) provisions discouraged small site development.

---

Doug Coenen, General Manager for Oregon Waste Systems, told the Commission Oregon Waste Systems had participated in the fee rules process but indicated the Department had not considered all key issues. Mr. Coenen said his company was not opposed to the increased fees and supported the fee structure; however, he said the 21 cents per ton fee was flawed because it was not related to actual operating costs. He said that Oregon Waste Systems would be providing 40 percent of the revenue and subsidizing other landfills. Mr. Coenen indicated his company had suggested a tiered fee schedule which the Department had dismissed. He said a reasonable fee should be approached, that the fee schedule does not conform and is illegal; he urged the Commission to reject the rules and request the Department to develop a more equitable proposal for cost distribution.

Mr. Donaldson responded the Department examined the equity issue and agreed with the advisory committee that the best approach was for every citizen to pay the same rate. He stated that on balance, the proposal was considered to be fair. Commissioner Castle asked about the fee schedule not being in accordance with statute. Robert Danko, Hazardous and Solid Waste Division, said the schedule was not different than the one which has been in place for the past eight years. He continued that the fee was not intended to be a direct fee for service, that the legislature was aware of the basic fee structure and had not directed any changes.

Larry Knudsen, Assistant Attorney General, said the statute could be interpreted as requiring a strict cost of service approach and could also be interpreted otherwise. He noted the Commission has not interpreted it as requiring a strict cost of service approach, that the Commission's interpretation could be defended as equitable, and the legislature has effectively ratified the Commission's interpretation.

Commissioner Castle moved approval of the Department recommendation for adoption of the proposed Solid Waste Permit Fee Rules; Commissioner Lorenzen seconded the motion. The Commission unanimously approved the motion by roll call vote.

Commissioner Squier noted the staff report was very good, and the response to comments and other materials were helpful. She also noted her appreciation for the work of the advisory committee. Chair Wessinger also expressed his appreciation to the advisory committee for their work.



OTHER ITEMS

**D. Review of Hearings Officer's Decision in DEQ v. Baida.**

Larry Cwik, Environmental Law Specialist with the Enforcement Section, provided a brief summary of this case.

Michael Henderson, attorney for Fred and Susan Baida doing business as Caveman Auto Wreckers, Grants Pass, summarized his four objections to the Department's hearings officer's final order and judgement relating to the open burning civil penalty. Those objections were:

1. that the Department conducted an unlawful search of the property and did not have a search warrant; that it was the state's burden of proof to obtain a search warrant.
2. that the situation created an unequal violation class; the five-day notice rule applies to some and does not apply to others and was, therefore, an unequal application.
3. that it was the burden of the Department to educate the public about open burning and that was not done.
4. that the de minimis rule applied in this case.

Arnold Silver, Assistant Attorney General, responded to each objection and spoke briefly about the five-day notice. Mr. Henderson further stated that the Department's inspection was an unlawful intrusion, and the investigation should be considered under criminal law procedures.

Commissioner Lorenzen asked Mr. Knudsen about how federal law would be applied in this case. Mr. Knudsen responded the privacy test was not necessarily applied under state law and indicated that federal law does not apply since the respondents had only raised the issue under Oregon law. Mr. Henderson replied that he believed that Oregon law was broader than federal law. Commissioner Lorenzen indicated that the Commission was not an appropriate forum for determining search and seizure laws; Commissioner Squier agreed.

Commissioner Lorenzen moved to affirm the Hearings Officer's decision; Commissioner Squier seconded the motion. The motion was unanimously approved by roll call vote. Mr. Knudsen recommended that an order be prepared for the Director's signature on behalf of the Commission. Commissioner Squier moved that Mr. Knudsen prepare the order for the Director's signature; Commissioner Whipple seconded the motion, and it was unanimously approved.

Chair Wessinger proposed that Public Forum be moved up from the scheduled time to accommodate representatives of Oregonians for Survival who had requested to testify.

### PUBLIC FORUM

Allan Mick, Boise Cascade Corporation, read a statement into the record. He spoke to the Commission about the cooperation and communication that has existed between his company and the Department. However, he said, because of the dioxin and AOX standards imposed, this was no longer true. Mr. Mick said the Department had ignored information presented by Boise Cascade and indicated that the process used by the Department to reach the standards was inadequate. He expressed frustration that the Commission had brushed aside the hearings officer's recommendation at the last meeting. He said Boise Cascade had submitted reports showing that no measurable dioxin/AOX bioaccumulation in crayfish or in sediments in the Columbia River.

Director Hansen stated the Department does not frequently enough reward industries that do a good job. He stated that Boise Cascade has done a good job, that they have made environmental improvements that were not required, and that they were close to meeting the AOX requirement although uncertainty does exist on their ability to comply. He added that cooperation between the Department and Boise Cascade was important but stressed that disagreements were possible. Commissioner Squier said the Commission was struggling with the issue and wanted to prevent any unanticipated problems with dioxin discharges. She said the Commission did not perceive the citizens of St. Helens as evil or intending to harm the environment.

Dan Pascoe, Oregonians for Survival, told the Commission that Oregon was losing its soul. He said the state is being controlled by over zealous regulators who acted without information and consideration. Mr. Pascoe further stated that the citizens of Oregon are subjected to restrictive rules adopted based on incomplete evidence and no consideration of impact on people. He asked the Commission to consider economics and the environment.

Linda Res, Oregonians for Survival, told the Commission of her experiences of attending hearings held by the Department. She said that comments made by staff members irritated her by their insensitivity to the people affected by new rules. Ms. Res indicated that extremists control the public participation process. She concluded by saying that the last Environmental Quality Commission meeting illustrated her point: the Commission did not listen to its own hearings officer and did not fully discuss and consider the ramifications of their ruling. Finally, she asked that the Commission take the chemical hysteria and politics out of their decisions.

**E. Non-Point Source Program Overview.**

The purpose of this agenda item was to explore fundamental elements of the surface water non-point source program. Andy Schaedel, Water Quality Division, gave an overview of non-point source pollution. Mr. Schaedel said that through the Clean Water Act, the Department was able to address water quality affected by non-point sources. As a result, a non-point source management plan was developed. Mr. Schaedel stressed that the plan involved interagency cooperation and implementation. He provided the Commission with statistics about non-point pollution and indicated that erosion control and riparian management were being used to reach plan objectives. Mr. Schaedel indicated that forestry, grazing and agricultural activities, and urban development and construction affect non-point sources.

He said the Department of Forestry is involved with the plan since streams receive the impact of forestry practices and construction and maintenance of logging roads. He said the tasks identified by Forestry and the Department were stream classification of size and uses and riparian cumulative effects. Mr. Schaedel added that urban development and construction contributed to non-point source pollution. He said the management plan included control of these activities through stormwater rules, basin plans and riparian management. In regard to agricultural activities, the Department is using riparian techniques and using Confined Animal Feeding Operation permits to prevent water quality degradation by non-point sources.

Roger Wood, Water Quality Division, further discussed grazing practices, approaches to environmental maintenance by local entities, creation of partnerships with interested entities and water policies developed by the Governor's Watershed Enhancement Board (GWEB).

Earl Shayer, Delaware Department of Natural Resources and Environmental Control, gave a presentation on the erosion control program developed and implemented in Delaware. He said that a similar program was successful in Maryland. He said Delaware's program provided education, training, development of cooperation and implementation of the program.

Tom Wilson, U. S. Environmental Protection Agency, spoke to the Commission about water quality planning, erosion and riparian management. He said he viewed the environment as "society's garden." Mr. Wilson added that societal costs were rising. He said current practices are inadequate and that new, creative approaches were needed.

**F. Commission Member Reports.**

Commissioner Whipple reported that the Governor's Watershed Enhancement Board (GWEB) was successful. She said she would report back about the direction of GWEB after their next meeting.

**F. Director's Report.**

Director Hansen reported the following:

- The Emergency Board approved three Department requests: approval to proceed with bond sales to finance the Orphan Site Account in July 1992; approval to accept federal grants for asbestos control and Clean Air Act implementation, non-point source pollution control and clean lakes program; approval to continue the lower Columbia River water quality study program.
- Governor Roberts nominated Tillamook Bay for participation in the U. S. Environmental Protection Agency's National Estuary program. The program offers funding and other assistance to states and local governments to develop long-range management plans for major estuaries. Tillamook Bay, which offers habitat for shellfish, salmon, trout and waterfowl, faces environmental concerns that are not extensively addressed in other estuary projects.
- The Department issued a notice of intent to revoke the Romaine Village wastewater facilities discharge permit. Romaine Village, a mobile home park near Bend, has had serious problems with subsurface wastewater treatment systems. The Department previously issued an order to Romaine Village to hook up to Bend's sewage treatment system, and the owner has failed to comply with the order.

- A settlement conference was scheduled for the municipal contested case for April 29, 1992.
- A May 5 public meeting was scheduled on the proposal for and independent contractor's review of issues relating to the gold mining rules. The purpose of the meeting was to inform interested public about the contractor's approach and schedule for addressing questions posed on liners, leak detection and leak collection systems, tailings treatment to reduce potential release of toxics and closure of heap leach and tailings facilities.
- The Department will begin the stage II vapor requirements. Although many of the larger service stations have already installed the systems, 71 service stations in Portland will be required to install vapor recovery systems. Along with the air pollution benefits, stage II is expected to conserve approximately a half million gallons of gasoline a year.
- Hearing Authorizations: The following rulemaking hearings have been authorized by the Director since the last meeting.

**Amendments to the Oregon Visibility Protection Plan:** provides improvements in Class I wilderness areas.

**Amendments to the Slash Burning Smoke Management Plan:** establishes special protection zones within 20 miles of  $PM_{10}$  nonattainment areas in western Oregon between November 15 and February 15.

**Amendments to Crematory Incinerator Rules:** addresses concerns by crematory operators that Department rules were unnecessarily restrictive for afterburner residence times.

---

The Commission asked the about the status of indirect source permits. Steve Greenwood, Administrator of the Air Quality Division, responded to the Commission's question about the indirect source issue discussed at the April 12 EQC meeting. He said the Central City Management Plan was being used by Portland to deal with indirect sources. He said the plan was a structured process involving citizen participation, managing sources and using developed strategies. Director Hansen said the current indirect source rule was used to control carbon monoxide. He indicated, however, the rule does not address summertime ozone. Director Hansen said the issues that need to be considered are how parking structures contribute to ozone levels and how parking structures located near light rail lines affect air quality.

- Director Hansen noted an additional Hearing Authorization approved since the last meeting:

**Enforcement Rule Update:** addresses problems that have been identified and incorporates changes to address 1991 legislation. An advisory committee has been assisting in rule amendments development.

**H. Work Session: Discussion of Tax Credit Program Issues.**

The objective of the work session discussion was to receive direction from the Commission on changes to the tax credit program. Director Hansen provided a brief overview of the tax credit program issues. He said three issues should be considered about the program:

1. Who should be let through the door to be eligible for consideration for tax credits?
2. Once through the door, what kind of benefits should they receive?
3. Should the program be based on priorities rather than the current "entitlement program" approach?

Chair Wessinger said he would like to eliminate the existing program and start over with a zero budget process approach and an assessment environmental benefit resulting from tax credits; Commissioner Castle agreed with the Chair. Commissioner Squier asked whether the program has caused facilities to install equipment that is not required or otherwise would not consider. She also asked if it appease economic damage from more stringent requirements.

Commissioner Lorenzen said the tax credit program was a difficult way to encourage positive environmental responsibilities. He indicated he would prefer a direct payment approach rather than the hidden tax credit. He said he would be interested in two areas: assistance in overcoming the competitive disadvantage for locating in Oregon due to more stringent requirements, and an incentive program for investment in innovative projects which are not required but which have significant value as a demonstration project for technology transfer. Commissioner Castle posed the question of who pays for such a program. He also said the program should provide monetary relief for adjustments to new environmental laws; however, once the controls were in place, facilities should not be eligible to receive further credit.

Commissioner Castle said he believed the state was not receiving environmental benefits from the tax credit program as it existed today. Director Hansen said the program has proven worthwhile in the areas of recycling and other sole purpose applications but that benefits were questionable in field burning applications. Mike Downs, Administrator of the Environmental Cleanup Division, told the Commission that environmental benefit, subsidies and/or incentives were issues to be considered. Mr. Downs said that most tax credit application approvals are awarded to large businesses able to afford upgrades. He suggested the Commission might want to consider restricting awards to small businesses only.

Commissioner Whipple asked about equity of capital investments. Mr. Downs responded that to prevent an inequity and to provide a cap of awards, priorities would need to be assigned. Commissioner Whipple suggested that each applicant have an economic cap. Commissioner Castle pointed out that upgrades to existing equipment would be more costly than for new facilities meeting requirements.

Commissioner Whipple asked whether the Commission should suggest replacement. Commissioner Castle suggested the Commission clarify their thoughts and report back to the legislature. Director Hansen noted that the Governor would welcome suggestions from the Commission. Commissioner Squier suggested that a way to look at the issue would be to consider what could be done with the tax credit dollars that would be more beneficial to the environment. Commissioner Castle stated there is no evidence of environmental benefit from the tax credit program.

Commissioner Castle said he thought the program should be eliminated since it involved equity and economic issues which are difficult to balance. Commissioner Whipple said the Department should encourage state-of-the-art environmental equipment and techniques. Commissioner Lorenzen said the state does not have the luxury for this program and that the program be placed low on the priority list. He suggested the Department receive funds for grants and studies instead.

Director Hansen said the Department could start the program at a zero budget and then discuss the potential for add backs. He said the Department of Economic Development and citizen advisory committees could be used to help in this matter. Commissioner Castle provided a handout of his ideas about the tax credit program. That document is made a part of this hearing record. Commissioner Castle suggested the Department deal with the program on an industry basis instead of an individual basis. Commissioner Squier said the program needed to be examined as to whether it was the appropriate mechanism for achieving environmental compliance. She suggested grants would be preferable to tax credits.

Jim Whitty, Associated Oregon Industry, told the Commission that the tax credit program allowed facilities to more easily reach compliance. Quincy Sugarman, Oregon State Public Interest Research Group, said there were other methods available for facilities to achieve environmental benefits. She said the tax credit dollars should be used to develop prevention programs, to promote waste reduction and to solve non-point source and groundwater pollution. Jean Cameron, Oregon Environmental Council, suggested implementing grants and capital loans instead of tax credits. She said pollution has associated environmental costs and that cost should be shifted back to the polluter. Ms. Cameron said the program should promote best available technology. She added that a new program could subsidize cost of that technology.

Chair Wessinger asked Director Hansen about the timeline of the 1993 legislative session and if enough time was available to develop this issue into a legislative concept. Director Hansen said that concepts were to be submitted to the Executive Department by May 1, the concepts would then be presented to Legislative Counsel by June 1 and that the concepts would become final in November.

The next steps needed to proceed with this issue were summarized:

1. Eliminate the program; consider the impact on the regulated community.
2. Develop a modest program of grants for innovative environmental initiatives.
3. Limit the tax credit program to new requirements for existing industry.

Mr. Downs suggested a work group and zero based budget approach be used. Director Hansen said the Department would draft a legislative concept which will be considered by the Governor and Legislative Counsel. He said the Department would return to the Commission with a concept before the June 1 Commission meeting. Commissioner Lorenzen said he believed this issue was important and of high priority. Director Hansen suggested that the groups who testified develop their ideas and work with the Department to create a concept.

There was no further business, and the meeting was adjourned.

The Commission and Department management staff then went to Menucha for a Commission/staff work session discussion on budgeting for the 1993-95 biennium, developing potential legislative concepts for the 1993 legislative session and considering other matters related to Commission/Department operations. This work session convened on Thursday afternoon and continued through Friday afternoon.



Approved _____
Approved with Corrections _____

*Minutes are not final until approved by the EQC*

## ENVIRONMENTAL QUALITY COMMISSION

Minutes of the Two Hundred and Twenty First Meeting  
June 1, 1992

### Regular Meeting

The Environmental Quality Commission regular meeting was convened at 8:30 a.m. on Monday, June 1, 1992, in Conference Room 3A, Oregon Department of Environmental Quality (DEQ), 811 S. W. Sixth Avenue in Portland, Oregon. The following commission members were present:

William Wessinger, Chair  
Dr. Emery Castle, Vice Chair  
Henry Lorenzen, Commissioner  
Carol Whipple, Commissioner  
Linda McMahan, Observing

Also present were Larry Knudsen, Assistant Attorney General, Oregon Department of Justice, Fred Hansen, 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, DEQ, 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 into the minutes of the meeting by reference.

Chair Wessinger called the meeting to order and introduced Linda McMahan. Ms. McMahan has been nominated to replace Commissioner Squier.

#### A. Approval of the Minutes.

Commissioner Castle moved that the February 18, 1992, Special Meeting, and the April 23, 1992, regular meeting, minutes be approved; Commissioner Lorenzen seconded the motion. The minutes were unanimously approved.

**B. Approval of Tax Credit Applications.**

The Department recommended approval of the following tax credit applications.

<b>Application Number</b>	<b>Applicant</b>	<b>Description</b>
TC-2923	Newberg Garbage Service	Solid waste recycling equipment.
TC-3705	Hillsboro Auto Wrecking	RGF Ultrasorb water recycling system.
TC-3758	Whitman's Towing and Crane Service	Automobile air conditioner coolant recycling machine.
TC-3759	Fuller's Automotive	Automobile air conditioner coolant recycling machine.
TC-3761	Rush Automotive	Automobile air conditioner coolant recycling machine.
TC-3771	Bauer Enterprises	Automobile air conditioner coolant recycling machine.
TC-3773	The Autosmith	Automobile air conditioner coolant recycling machine.
TC-3780	Don and Laura Christensen	Grass seed straw storage shed.

Additionally, the Department proposed an addendum to this agenda item and recommended approval of Application Number TC-3724. This tax credit application for National Frozen Foods is a wastewater treatment system consisting of a wastewater surge/storage pond, a closed pattern tile drainage system under the wastewater disposal area and associated plumbing system.

Roberta Young of the Tax Credit Program, Management Services Division, and Mike Downs of the Environmental Cleanup Division, asked that Application Number TC-2923, Newberg Garbage Service, be deferred until the July Environmental Quality Commission meeting. The Department had requested that more information be submitted.

Commissioner Lorenzen moved that Agenda Item B with the exception of TC-2923 be approved with the addendum; Commissioner Whipple seconded the motion. The motion was unanimously approved.

## **RULE ADOPTIONS**

### **C. Proposed Adoption of Risk-Based Soil Cleanup Standards.**

Background: The amendments and proposed additional rules provide for numerical cleanup levels and a streamlined process for potentially responsible parties (PRPs) to clean up hazardous substances at "simple" sites.

Discussion: Director Hansen provided the Commission with a brief summary of advisory committee efforts and the need for numerical standards. Brooks Koenig, Environmental Cleanup Division, spoke about the process used in developing the cleanup standards table, that the advisory committee met and deliberated for about 18 months on the standards and that a technical subcommittee had been created to facilitate the process. Mr. Koenig also talked about using risk assessment in creating the cleanup table. He said that these standards were for simple sites where soils contained few contaminants.

Commissioner Lorenzen asked how much of the cleanups were required by the federal government. Director Hansen reviewed the Superfund program and noted that most of that money went toward consultant studies not cleanup. Commissioner Lorenzen said he believed too much resources were being spent on achieving background levels and that this issue should be revisited. Director Hansen responded that the Department had established background as a requirement. This was done to coincide with strict liability existing under federal law, that banks are unwilling to give credit and that insurance companies are unwilling to insure owners of potential contaminated property. Director Hansen indicated that these rules were for simple spills where testing is relatively easy to determine background. Mr. Downs also added that background is the goal to be achieved if it is technically and economically feasible, however, no site has yet been cleaned to background.

Action: Commissioner Castle **moved** that the amendments to the existing cleanup rules be approved; Commissioner Lorenzen seconded the motion. Mr. Koenig added that the cleanup tables would need some minor adjustment to file with the Secretary of State. Commissioner Lorenzen indicated that his second to the motion included those minor adjustments. Agenda Item C was unanimously approved.

Director Hansen said that the Environmental Cleanup Advisory Committee will review the progress of the changes and report their findings to the Department. This information will be included in the Director's Report to the Commission.

**D. Proposed Adoption of Underground Storage Tanks (UST) Clean Up Rule Revisions for Groundwater Clean Up Standards and Procedures.**

Background: The rule amendments establish groundwater clean up standards, provide clear direction and foster consistent clean up of UST releases and protection of public health, safety, welfare and the environment.

Discussion: Mike Downs, Lon Revall and Michael Fernandez of the Environmental Cleanup Division provided the Commission with a brief summary of the amendments. Mr. Downs said the amendments reduce the length and expense of cleanup evaluations. He noted that several years ago, the soil matrix rules were adopted to guide simple cleanups of UST sites with only soil contamination by petroleum. These rules complete the process by extending the concept to include numeric criteria for groundwater cleanup. Mr. Revall added that the amendments provide an option for responsible parties who do not want to initiate an extensive study. Further, the rules provide consistency and decentralize the cleanup process. Chair Wessinger asked staff if the concerns expressed by Mr. Wright of Fossil had been addressed. Mr. Revall replied that use of the cleanup table was only one option. He indicated that other options could be pursued, including the normal study and cleanup process.

Doug Dehahn, Executive Director of the Oregon Petroleum Marketers' Association, spoke to the Commission. Mr. Dehahn gave background information about heating and motor fuel dealers. He said that groundwater contamination is only one of the problems faced by owners of USTs. Mr. Dehahn also expressed concern about petroleum delivery systems. He indicated that several divisions of the Department are working on UST related issues independently and are not well coordinated with each other and with the dealers and distributors. Mr. Dehahn told the Commission that these groundwater rules will add 4 cents per gallon to the price of gasoline at the pump. He stated that the price of gasoline already includes 15 cents per gallon for environmental requirements.

Chris Wholers, District Manager of ATEC Environmental Consultants, and a member of the advisory committee, said he voted to not send the rules to the Commission. His preference was for the committee to continue working on the rules over the next 18 months. Mr. Wholers said there has been a great deal of debate about including additives in the groundwater rules; however, he said, the Department had not thoroughly examined the issue. He indicated that questions exist about the need for standards on additives and that he had not seen any data that would support the rules in this regard. He added that other states were not including additives in their rules. Mr. Wholers said the rules need to be verified over the next 18 months and that field data should be analyzed. He said that the Department should investigate how other states approach leaking underground storage tank (LUST) sites and that some states

are examining PAH and additives in their sampling. Mr. Wholers added that the rules increase costs. He said that staff had made assumptions that contaminated water could be discharged at sewage treatment plants (STPs). He said that STPs require further clean up of the water at a significant cost. In concluding, Mr. Wholers said there was a problem with the groundwater class system and that shallow aquifers not used for drinking water should not be included in the rules. Mr. Wholers recommended that the Commission hold the rules for further study and not adopt them.

Mr. Revall said that the advisory committee agreed to revisit the rules in 18 months but did not agree to come back with site-specific data. Mike Anderson, Environmental Cleanup Division, indicated that every substance in the soil cannot be analyzed. He said the Department looked for the more risky compounds (based on risk assessment data) and had consulted with the Department's toxicologist to research safe levels of compounds. Mr. Anderson said that determining whether additive compounds are apparent in samples is very controversial at this time. He noted that the Department is asking for PAH data only at selected sites.

Anne Hill, Chair of the Environmental Cleanup Advisory Committee, indicated that this discussion had occurred on many occasions before the committee. She noted that there were three dissenting votes and that the majority vote of the committee was reflected in the proposed rules. She stated that the initial screening was appropriate and beneficial to Oregon. She added that the committee will review the matter in 18 months and make a judgment about whether the empirical data justifies the rule.

Action: Commissioner Castle moved that Agenda Item D be approved; Commissioner Lorenzen seconded the motion. The revisions to the UST cleanup rules were unanimously approved.

Staff indicated that they would return to the Commission regarding data collected over the next 18 months and could return sooner depending on the results.

**E. Proposed Adoption of Amendments to Hazardous Waste Fees, Aquatic Toxicity, Chlorofluorocarbons (CFCs) Rules:**

Background: Stephanie Hallock, Hazardous and Solid Waste Division, provided the Commission with a brief description of the proposed amendments to the three rule topics included in this item. She also provided the Commission with a copy of a proposed clarifying amendment which substituted a new paragraph (4) on page A-5 of Attachment A to the staff report.

Discussion: Chair Wessinger asked why the three disparate items were included under one agenda topic. Ms. Hallock replied that combining the requests reduced the number of requests brought before the Commission. Staff and Commission discussed the fee cap included in the proposed hazardous waste generator fee increase. Commissioner Castle said he was not convinced a cap was needed and expressed concern about the wording in the staff report. Commissioner Whipple asked about creosote. Director Hansen indicated that the cost of shipping creosote materials to a hazardous waste disposal facility was prohibitive.

Action: Commissioner Whipple moved that Agenda Item E, including the amendment proposed by staff, be approved; Commissioner Castle seconded the motion. The motion was unanimously approved.

**F. Proposed Adoption of Underground Storage Tank Financial Assistance Rules.**

Background: The proposed rules provide financial assistance in the form of loan guarantees, reduced interest rates, grants and insurance co-payments to property and tank owners or permittees to assist in meeting corrective action, technical and financial responsibility requirements at facilities with underground storage tanks containing motor fuel for resale.

Discussion: Commissioner Lorenzen asked about the potential for dual compensation of stations displaced by federal or state government highway projects. Director Hansen indicated the Department provided actual cleanup and replacement costs of the tanks but that he would check to make sure this was correct. He said these sites were usually seasonal facilities.

Ms. Hallock also introduced a series of amendments to the rules on pages A-3, A-21, A-22, and A-23. The amendment at the top of page A-21 was suggested by the Department's Legal Counsel. The remaining amendments were clarifications suggested by the U. S. Environmental Protection Agency.

Action: Commissioner Lorenzen moved that Agenda Item F with the proposed amendments be approved; Commissioner Whipple seconded the motion. The rules and amendments to implement UST financial assistance programs were unanimously approved.

**K. PUBLIC FORUM**

Ron LaFriend, Oregonians for Survival, spoke to the Commission about the April 23 EQC meeting. He referred to the non-point source program overview and indicated he had concerns and questions about the presentation. Mr. LaFriend questioned the bioassay techniques used. Additionally, in regard to the document presented, he had disagreements with page 6 of the report and said that the examples provided did not represent the majority of Oregonians. He said that the staff does not listen to the citizens of Oregon and that the Department is growing for the sake of growing and does not need additional staff. He concluded by stating that the magnitude of the problem is out of proportion, and the Department is not using common sense approaches.

**G. Proposed Adoption of Rules to Increase Fees for Municipal Waste Discharge Permits.**

Background: The proposed rule amendments would increase the annual compliance determination fee, permit processing fee and would add a new category to assess a fee for technical activities related to permit processing. The fee increases would be used to secure additional revenues necessary to fund municipal permitting activities.

Discussion: Lydia Taylor, Water Quality Division, provided the Commission with a brief background about the changes. She indicated that in addition to increases, the fee schedule included fees for some sewage sources which had not been previously required to pay for permits. The increase would be used to maintain the permit program and reduce the backlog of permits. Tom Lucas, Water Quality Division, said the advisory committee and an additional technical subcommittee examined various fee options including fixed fees and fees based on flow and population.

John Smits, representing Smits and Associates, said that the current system could not provide adequate accounting to support the fee proposal. He suggested that the proposed fees were excessive for small systems he represented.

Director Hansen said that for the record the municipalities had expressed concern to the Department about the increased fees. Commissioner Whipple noted that someone must pay the cost for permitting, but was concerned that people believe they are not getting what they are paying for. Ms. Taylor replied that the Department provides the permit program on behalf of the people of Oregon, that permit processing had not been prompt enough, and that the fees seek to recover the costs sufficient to fund the program. Commissioner Castle said the cost was inevitable and did not appear out of line in a real world context.

Action: Commissioner Castle moved that Agenda Item G be approved; Commissioner Lorenzen seconded the motion. The proposed rules to increase fees for municipal waste discharge permits was unanimously approved.

**H. Proposed Adoption of Minor Changes in Wastewater Permit Fee Schedule for General Permits.**

Background: The proposed rule changes would revised the wastewater permit fee schedule in order to cover additional general permits proposed to be issued by the Department.

Action: Commissioner Whipple moved that Agenda Item H be approved; Commissioner Lorenzen seconded the motion. The changes to the wastewater discharge permit fee schedule were unanimously approved.

**ACTION ITEMS**

**I. Request for a Wet Weather Season Mass Load Increase for the City of Newberg.**

Background: Commission approval of an increase in allowable discharge loading during the wet weather season for the City of Newberg would enable the City to fully use the design capacity of the treatment plant without violating the mass-based effluent limits for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) in the National Pollutant Discharge Elimination System (NPDES) permit. The Department concluded that the proposed increase would not impair the beneficial uses or cause violation of water quality standards of the Willamette River.

Action: Commissioner Lorenzen moved that Agenda Item I be approved; Commissioner Castle seconded the motion. Agenda Item H was unanimously approved.

**J. Bond Issuance Resolution for Mid-Multnomah County Sewers (City of Gresham).**

Background: This resolution would authorize issuance of pollution control bonds in the amount of \$1,500,000 for one the purchase of special assessment bonds from the City of Gresham for sewer construction in mid-Multnomah County.



Discussion: Chair Wessinger asked why the Department was buying and selling bonds. Noam Stampfer, Management Services Division, replied that the Department could obtain a lower interest rate for the users. Director Hansen indicated that the EQC ordered the sewerage. He said the city would put their bond rating at risk if they purchased the bonds. Effectively, Director Hansen indicated, the Department would be functioning as a bond bank.

Action: Commissioner Whipple moved that Agenda Item J be approved; Commissioner Castle seconded the motion. The bond issuance resolution was unanimously approved.

Commissioner Castle commented on the fee cap issue discussed previously in Agenda Item E. He said that he had difficulty with the cap rationale but believed it was well reasoned and could be used as a model. Commissioner Castle asked the Department to examine the issue further. Director Hansen indicated the Department would do so. Commissioner Castle further stated there should be some cost associated with the amount of waste generated.

**L. Commission Member Reports:**

Commissioner Whipple said that funding for the Governor's Watershed Enhancement Group would discontinue after June. She said the group would meet this month to allocate remaining available funds for enhancement projects. She indicated the group would be examining cost share support for watershed projects.

Commissioner Whipple said it would be unfortunate for the group to disassemble and then later have to start over again. She said it was important that federal and public participation proceed in this type of forum.

Chair Wessinger reported on conversations he had regarding the issue of AOX and the order entered by the Commission in the pulp mill permit appeals. He indicated that complete technical information may not have been available when the Commission decided on these limits. Chair Wessinger said that he met with James River in Vancouver, Washington, as an individual, not representing the Commission. He said James River indicated they were close to meeting limits by substituting chlorine without spending additional monies to install oxygen delignification to reach the same result. He noted his concern with what was being discharged to the river.

Chair Wessinger said that the mills would like the Commission to reconsider the matter. He indicated the Department had followed Washington State's dioxin requirements; however, Washington and Oregon do not have similar standards now and Oregon's requirements could be allowing two different discharge limits in the same water body. He suggested a request for reconsideration could be handled as follows:

1. The companies involved would provide information about why the Commission should reconsider the limits;
2. The other parties in the proceeding could provide input to the Commission on whether the matter should be reconsidered.
3. The Commission would decide to reconsider; if the Commission chose to reconsider, then the actual procedure for the reconsideration process would have to be determined.

Larry Knudsen, Assistant Attorney General, replied that if a motion was filed, the Commission may choose to act on the motion; if no action was taken, the motion would be deemed denied.

Commissioner Lorenzen said he had questions about what the State of Washington and the U. S. EPA were doing in regard to this issue.

Mr. Knudsen suggested a motion for reconsideration would put the issue back into a contested case process and any ex parte contacts would need to be disclosed and placed in the record. Commissioner Lorenzen said it would be easier to discuss the policy issues potentially involved in a rulemaking proceeding rather than in a contested case. Mr. Knudsen indicated that rule making could be undertaken and that new or amended rules could cause permits to be amended.

Commissioner Whipple said she would not mind reconsideration if water quality improvement would result.

**M. Director's Report:**

Director Hansen reported on the following items:

1. A Special Legislative Session may occur to consider the Governor's proposed tax plan; mail-in voting may be used.

2. A preliminary report of the Columbia River Study indicates elevated levels of metals, dioxins and bacteria.
3. James River Recycling Plant was recently dedicated. The plant is operating at 60-70 percent of production capacity and with a wastewater discharge that is 15-20 percent of their allowed discharge load.
4. Hearing authorizations:
  - A rulemaking hearing was authorized on a proposed rule to require the use of oxygenated fuel during the winter months (November-February) in carbon monoxide non-attainment areas beginning November 1, 1992. Areas affected include Jackson and Josephine Counties, Klamath County, and the Portland Metropolitan Area (Multnomah, Clackamas, Washington, and Yamhill Counties). Use of oxygenated fuel is a new requirement of the recent Federal Clean Air Act amendments.
  - Rulemaking hearings are expected soon on three rule amendments in the water quality program. These amendments will deal with the enterococcus bacteria standard, mass waste load limits for municipal permits and the extent to which compliance with a permit should shield the permittee from enforcement of permit related rules.

#### **OTHER BUSINESS**

The Commission considered future meeting schedules and made the following determinations:

- Friday, August 7, 1992 -- A special meeting in Portland to consider the consultant's report on the mining rule issues was scheduled .
- Friday, September 11, 1992 -- The regular meeting previously scheduled for September 9 was moved to September 11. That meeting will be held in Eugene.

**INFORMATIONAL ITEMS**

**N. Information Report on Proposed Parking for the 600 Holladay Building.**

Background: The purpose of this discussion item was to provide the Commission with general information on parking policies in the region in light of the proposed 600 Holladay Building parking project. Director Hansen gave a brief summary of this issue. He said that the project must meet special conditions required by the City of Portland and Tri-Met. Additionally, the Governor's Motor Vehicle Task Force (MVTF) would be studying this policy.

Discussion: Keith Bartholomew, 1000 Friends of Oregon, spoke to the Commission. He commended the Director and Commission on their creative approach to this issue and asked that they consider other solutions. Mr. Bartholomew said these solutions included creating a sound policy and making the parking space to tenant ratio one-to-three. Further, he had concerns about the timing of this project in regard to other parking projects in the Sunset Corridor, Beaverton, Gresham and Hillsboro. He urged the Commission to take temporary measures now and that Option No. 4 in the staff memorandum be considered by the MVTF.

Commissioner Lorenzen recommended the Department make parking structure permits self-enforcing. Director Hansen replied that non-conditional permits could be developed and civil penalties could be applied when permit requirements were violated.

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

## Environmental Quality Commission

- Rule Adoption Item  
 Action Item  
 Information Item

Agenda Item B  
July 23-24, 1992 Meeting

### Title:

Proposed Adoption of New Rule to Clarify Procedure for Calculating Mass Load Discharge Limits for BOD and Suspended Solids for Domestic Waste NPDES Permits

### Summary:

Past DEQ practice for calculating allowable winter Mass load limits for Biochemical Oxygen Demand and Total Suspended Solids in domestic wastewater has been somewhat inconsistent. Several permits have been challenged based on the lack of guidance in rule and on the limits set.

This action proposes adoption of amendments to the rules to indicate how these limits are to be calculated.

The concern that this action causes is that proper maintenance of the system still be performed and infiltration/inflow still be minimized. These items are addressed to some degree in this amendment but will be further addressed in separate actions.

Some additional discharge to the surface waters can be expected from this action although it would be in the wet weather period and will be enforceable with greater certainty than currently.

Public hearings have been held with considerable testimony coming principally from municipalities. The primary opposition was that this action did not go far enough, that they wanted mass load limits removed entirely for winter wet weather periods. The department does not agree and feels that winter limits are appropriate and achievable if set in a reasonable and consistent manner.

### Department Recommendation:

Adopt the rules as proposed in Attachment A of the staff report.

Barbara Burton  
Report Author

Rydia Taylor  
Division Administrator

Stephanie Hallack  
Director *Acting*

REQUEST FOR EQC ACTION

Meeting Date: July 23, 1992  
Agenda Item: B  
Division: Water Quality  
Section: Municipal Wastewater

**SUBJECT:**

Rule Change Establishing Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) Mass Limits for Domestic Wastewater Dischargers

**PURPOSE:**

This rule will specify how the Department calculates mass load limits, both for existing domestic wastewater treatment plants and for new or newly expanded treatment plants. In addition, a minimum inflow removal program is specified.

**ACTION REQUESTED:**

- Work Session Discussion
  - General Program Background
  - Potential Strategy, Policy, or Rules
  - Agenda Item  for Current Meeting
  - Other: (specify)

- Authorize Rulemaking Hearing
- Adopt Rules

Proposed Rules  
Rulemaking Statements  
Fiscal and Economic Impact Statement  
Public Notice  
Revised Proposed Rules

Attachment A  
Attachment B  
Attachment C  
Attachment D  
Attachment E



811 SW Sixth Avenue  
Portland, OR 97204-1390  
(503) 229-5696



Meeting Date: July 23, 1992  
Agenda Item: B  
Page 2

- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
  - Proposed Order Attachment
  
- Approve Department Recommendation
  - Variance Request Attachment
  - Exception to Rule Attachment
  - Informational Report Attachment
  - Other: (specify) Attachment

**DESCRIPTION OF REQUESTED ACTION:**

The Department is proposing a new rule that specifies how mass load limits for biochemical oxygen demand (BOD) and total suspended solids (TSS) are calculated for domestic wastewater treatment plants. The Department has assigned and included in permits mass load limits since the late 1960's, under the authority of more generally worded regulations. This new rule will specifically authorize the Department to include mass limits in permits.

The mass limits being proposed will generally be considerably higher than those currently assigned for winter discharge limits, but will be the same for summer discharge limits. Mass limits for new facilities will be assigned on a case-by-case basis, after an engineering evaluation of the treatment capability of the proposed facility. Finally, the proposed rule requires that a stormwater inflow removal program be implemented for each facility receiving a higher winter mass load limit. [High flows from stormwater and groundwater entering the sewer system through cracks and imperfections wash out some solids in the treatment plant and are the primary cause of high mass discharges in the winter.] The text of the proposed rule is included in Attachment E. A brief narrative summary of the key features of the rule is presented in Attachment I.

**AUTHORITY/NEED FOR ACTION:**

- Required by Statute: \_\_\_\_\_ Attachment
- Enactment Date: \_\_\_\_\_
- Statutory Authority: ORS 468B.030 Attachment F
- Pursuant to Rule: \_\_\_\_\_ Attachment
- Pursuant to Federal Law/Rule: \_\_\_\_\_ Attachment

\_\_\_ Other: Attachment \_\_\_

X Time Constraints: (explain)

The Department is required under the current State/EPA agreement to issue 12 major municipal permits by September 30, 1992. Many of these municipalities have indicated that they will appeal their permits if the mass limits are not increased for winter discharges. Some additional municipalities of the 12 may also appeal their permits even with the increased winter mass limits proposed. By having this proposed rule in place prior to issuing these 12 permits, many if not all of the permit appeals can be avoided. If there are remaining municipalities that are still not satisfied with the increased mass limits, they may still appeal their permits. However, by having the mass limits in this specific rule, their chance for prevailing in a permit appeal is greatly reduced.

X Need for Rule:

The Department is proposing this rule for the following reasons:

- Legal authority challenged - Our authority to include mass limits in permits has been challenged through permit appeals, and may be the continued subject of permit appeals. The Department believes that it has adequate authority now through more general regulations (such as the "highest and best practicable treatment" and anti-degradation rules). However, by adopting a very specific rule for mass limits, future appeals will be discouraged and are much less likely to prevail.

- Need for consistency - There is a need for consistency in how mass limits are assigned. Documentation is not good for past decisions regarding why exceptions were given to the mass load limits, and this will allow the Department to start again with consistent limits.

- Need for certainty - There is a need for certainty for municipalities, in terms of what limits will be assigned and must be met.

- Need for higher limits to avoid violations - With the potential for third party enforcement of effluent violations, many of the larger municipalities are no longer comfortable with limits that may be exceeded periodically.



Meeting Date: July 23, 1992  
Agenda Item: B  
Page 4

**DEVELOPMENTAL BACKGROUND:**

<input type="checkbox"/> Advisory Committee Report/Recommendation	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Hearing Officer's Report/Recommendations	Attachment	<u>G</u>
<input checked="" type="checkbox"/> Response to Testimony/Comments	Attachment	<u>H</u>
<input type="checkbox"/> Prior EQC Agenda Items: (list)	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Other Related Reports/Rules/Statutes:	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Supplemental Background Information	Attachment	<u>I</u>

**REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:**

The Oregon Association of Clean Water Agencies (ACWA) and its predecessor organization, Association of Oregon Sewerage Agencies (AOSA), represent many of the municipalities that have permits with the Department. These organizations have for several years vigorously advocated that the Department either eliminate mass load limits entirely for domestic wastewater treatment facilities, or significantly raise these limits. In addition, four municipalities appealed a total of seven permits last year, based on their opposition to mass limits as well as some other permit conditions. The Department has had much discussion with interested municipalities on this issue in the last year or two.

In summary, Oregon ACWA and most municipalities support most of the proposed rule change, with some minor disagreements. Most municipalities testified that they can "live" with the much higher mass limits proposed in these rules, however they would still prefer no mass limits at all.

A total of 16 municipalities or organizations submitted testimony during this proposed rule public comment period. The following summarizes the main points raised during discussions and during the testimony, and includes the Department's response. Specific testimony given during the public comment period is included in the Hearings Officer report, attached to this staff report.

- 1. Mass load limits are not needed and serve no useful purpose. The reasons given by the Department are either not valid or could be addressed using other rules.**

Department response: The Department strongly disagrees. Mass load limits have been a valuable tool in managing Oregon's waters, and have been included in NPDES permits for almost twenty-five years for a number of reasons, including:

- **Mass limits allow the tracking and control of pollutant loads on streams, and the gradual "creeping up" of waste loads on a stream can in part be prevented.** Mass loads could be monitored without a corresponding effluent limit, however this would not allow the Department to control the loads on streams. By assigning mass loads and assuring that they are not exceeded, the Department is fulfilling it's role in protecting and preserving Oregon's waters. Assimilative capacity can be allocated based on a formal and thoughtful evaluation of each request for an increase, rather than on a "first come, first served" basis regardless of need for increase or alternatives available. Without mass load limits, this could not occur.

- **Mass loads are the best indicators of pollutant loads on receiving streams.** Mass loads continue to be the best indicators of pollutant load and impacts on receiving streams, and for this reason are used to bring water quality limited streams back into compliance. Effluent concentration levels do not fill this function and do not predict the impact of a discharge on the receiving stream.

- **Mass limits can require good operation and maintenance of treatment plants and sewer systems, and minimize the discharge of pollutants to public waters.**

- **Mass limits are the only type of daily discharge limit for BOD and TSS, and serious excessive discharges could be allowed without this daily limit.** Consequences of high daily discharge of BOD and TSS include potential public health impacts from poor chlorination (chlorine cannot penetrate large solids), unsightly conditions (dark brown and turbid), and can stress a stream depending on the dilution ratio and time of year. There are many, many operational or other causes of high daily discharges. The following is a very partial list of the types of operational decisions or events that could cause violations of daily limits but not weekly or monthly limits: pumping too much sludge too quickly to the digesters (too much high strength digester supernatant back to treatment plant); carrying too high sludge mass (through failure to haul sludge); receiving too many gallons of septage on one day; dumping a portion of a digester into the treatment plant, or outfall; emptying a lagoon in one day; getting a shock load of industrial wastes (failure to properly control dischargers into sewer system); temporary breakdown of equipment as a result of inadequate maintenance; failure to have properly trained operators on site every day when an easily correctable problem arises; and

quick emptying of a clarifier or other treatment unit for maintenance.

These types of unfortunate occurrences would be very difficult for the Department to address through enforcement action using other regulations. The rule probably used would be the "highest and best practicable treatment" requirement included in the permits. However, this then opens up the argument as to what constitutes proper operation. It is important to have numerical standards to rely on rather than have ongoing disputes on what constitutes proper operation. One of the purposes of numerical standards is to clearly establish for the permit holder and the Department what is acceptable, and what is not.

**- Mass load limits encourage and require good maintenance of sewer systems, by requiring that excessive flows be reduced. They also prevent attaining compliance with concentration limits by diluting the influent.** The manner in which the mass load limits have previously been calculated did in fact encourage sewer system maintenance. However, the proposed mass limits effectively removes this as a reason to have mass limits, since the winter time limits (when leaky sewer systems have the most impact) are greatly increased. Dilution can come through a failure to remove direct connections with streams (some cities such as Portland do direct intermittent streams into their combined sewer system) and with storm water, or to allow further such connections. By removing mass load limits or greatly increasing them, most of the incentive to remove these excessive stormwater flows would not exist.

2. **As long as there are no instream water quality standard violations caused by discharges and minimum federal standards are met, municipalities should be allowed to operate treatment facilities as cost effectively as possible with unlimited pollutant discharges. That is, there is no obligation on the part of municipalities to minimize pollutant discharges as long as minimum federal standards are being met and no instream standards are being violated. Alternately, some municipalities believe that mass limits should be based on the assimilative capacity of the stream, not based on what the treatment plant can produce.**

Department response: Many commenters included this in their testimony, and this continues to be a significant departure from the Department's and Commission's approach to pollution control. The Department continues to follow the Oregon Legislature's and Commission's direction that:

**- Pollution is to be minimized** - "Pollution of any of the waters of the state is declared to be not a reasonable or natural use of such waters and to be contrary to the public policy of the State of Oregon..." [ORS 468.715]

**- Assimilative capacity is a precious resource to be preserved and thoughtfully assigned** - "Oregon's water quality management policies and programs recognize that Oregon's water bodies have a finite capacity to assimilate waste. The strategy that has been followed in stream management has hastened the development and application of treatment technology that would not otherwise have occurred. As a result, some waters in Oregon have assimilative capacity above that which would exist if only the minimum level of waste treatment was achieved. This unused assimilative capacity is an exceedingly valuable resource that enhances in-stream values specifically, and environmental quality generally. Allocation of any unused assimilative capacity should be based on explicit criteria." [OAR 340-41-026(1)(b)]

**- Wastewater treatment plants are to be properly operated at their "highest and best practicable" level, regardless of other effluent limits** - "Notwithstanding the water quality standards contained below, the highest and best practicable treatment and/or control of wastes, activities, and flows shall in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels." [OAR 340-41-445(1) for the Willamette Basin, identical language in other basin rules.]

Mass limits for municipalities are technology based, in that they reflect a minimum expectation of what a well designed and operated treatment facility can achieve, regardless of the condition of the receiving stream. The Department continues to believe that effluent limits should be set that are high enough to be consistently achievable at well-designed and operated treatment facilities, and yet stringent enough to require good maintenance and operation. The proposed mass load limits do this. Setting much higher limits based on some streams having greater assimilative

capacity is not consistent with minimizing pollution and preserving Oregon's waters.

3. **Infiltration and inflow reduction should not be linked with mass limits. If any facility has a problem with these, they should be addressed individually. Infiltration and inflow reduction plans across the state and country have been notoriously ineffective, and should be approached with caution.**

Department response: As described above, one of the consequences of mass load limits as currently calculated is to encourage and require that extraneous flows in the sewer system (from groundwater and stormwater) be minimized. The proposed higher limits remove this incentive. To partially offset this, the Department is proposing an inflow reduction program. [Inflow refers to stormwater that directly flows into a sewer system through connections with roof drains, foundation drains, surface water, holes in manhole covers, parking lot drains, and street catch basins. Infiltration refers generally to groundwater that enters sewer systems through cracks, breaks, imperfect sealing of sewer pipes, crushed pipes, and other defects.]

It is true that infiltration reduction efforts have generally had very limited success. This is because, the system repairs often do not last very long, and because, as the groundwater rises past the level of sealed defects, it finds other (previously not detected) defects in the sewer system. However, permanently removing direct connections of inflow have proven to be effective, permanent, and relatively low-cost. It should be noted that all municipalities receiving an EPA Construction Grant (which are most facilities in Oregon) are required to adopt sewer ordinances prohibiting any new inflow connections, as a condition of grant award.

In theory, separate sanitary sewer systems should have no storm drains attached. However, many municipalities do not have separate storm sewer systems or drainage systems in all parts of their service area, and may have some scattered storm drains attached to their sanitary sewers. Disconnection of storm drains can be expensive to complete, when there is no storm sewer system or drainage nearby. The Department intends to deal with such difficulties on a case-by-case basis with municipalities, and will not require removal of catch basins where the cost is prohibitive. [If there are widespread connections of storm drains, then the system is considered a combined sewer system, and is

regulated under the federal combined sewer program. Oregon has only a handful of combined sewer systems left.]

For those municipalities having many inflow sources, removing them can have a significant impact on "peak" flows to treatment plants during storm events. It is not unusual to see a 20% reduction in peak flows from inflow removal, in systems with many inflow sources. Flows are directly related to mass loads discharged - if there is a 20% increase in flows, then the mass loads discharged will increase at least 20%, and probably more since the treatment efficiency deteriorates at high flows. Very high peak flows can result in the washout of solids in the treatment process, which both adversely affects the ability to disinfect the effluent, and can reduce the treatment efficiency for several days subsequent to the washout. It is the bacteria and other organisms in the solids that are the secondary treatment portion of the facility, and when they are washed out there are not enough organisms to effectively metabolize the sewage. This causes reduced treatment efficiency until the solids can be built up again. It should also be noted that fecal coliform testing is required relatively infrequently, and may well not pick up very high fecal coliform levels during "washouts" from high peak flows.

It is true that peak flow events to the treatment plant often coincide with high flows in the receiving stream, which reduces the impact of the much higher solids discharged. However, the Department believes that inflow control is a minimum reasonable expectation in terms of proper sewer maintenance. Inflow sources should not be connected to sanitary sewer systems. It is consistent with requiring the "highest and best practicable treatment".

**4. Concern was expressed regarding the lack of specificity on calculating mass loads for future facilities.**

Department response: The Department has tried several variations on calculating mass limits for new facilities over the past year or two. A technical advisory committee has been formed to recommend to the Department a consistent and reasonable method for determining mass limits for new facilities, however this group is not expected to arrive at a decision for six months to a year. In the interim, the Department would prefer to assign mass loads for new facilities on a case-by-case basis, in consultation with the individual municipality. Basically, the approach has been to start with a proposed treatment facility, and determine reasonable mass limits that are consistently achievable with good operation, but stringent enough to require good

Meeting Date: July 23, 1992  
Agenda Item: B  
Page 10

operation most of the time. The Department has been able to reach agreement on these reasonable limits with the municipalities so far.

**PROGRAM CONSIDERATIONS:**

There are approximately 250 domestic wastewater treatment plants that discharge to surface waters and would be affected by this new rule. An attempt was made to minimize the impact on the Department's workload in this rule, by requiring that permit holders furnish much of the information needed to change the mass limits, and by exempting these mass load increases from the usual detailed review process required in OAR 340-41-026. The Department does not have the resources to go through the detailed review process. If the Department were to follow the process specified in OAR 340-41-026(3) for all 250 facilities, we estimate it would take an average of two weeks per facility or ten staff working full time for one year. In addition, staff reports and presentations would have to be made to the Commission for load increases for major domestic wastewater dischargers.

The proposed rule requires that the permit holders develop and submit the necessary flow numbers, however some Department time will be required in reviewing these for reasonableness. In addition, some staff time will be required to review and comment on the mandatory inflow reduction program.

On the plus side, this new rule should reduce the number of permit appeals. If there are further appeals on mass limits, it is expected that the Department will spend reduced time on defending the permits since the mass limits will be specified in a rule, rather than based on unwritten Department policy.

**ALTERNATIVES CONSIDERED BY THE DEPARTMENT:**

1. Continue to require that mass limits assigned to existing facilities prior to construction and startup of facilities be met. If some facilities cannot meet these mass limits, then require system improvements or upgrades. Continue to exercise enforcement discretion for infrequent violations due to high flows only. This is basically the Department's current approach for existing facilities. Note that no upgrades have been required in the past four years based on mass limits alone. This approach is not acceptable to many of the major municipalities, due to heightened concern

regarding third party lawsuits, and will trigger further permit appeals. For this reason, this alternative is rejected by the Department.

2. Continue to set mass limits as currently calculated, using the average dry weather. For those facilities not able to consistently meet these limits due to high flows, evaluate on a case-by-case basis and follow procedures for mass load increases. This approach is generally acceptable to the Department, but does have three major drawbacks - it would not have settled the existing permit appeals, it would probably not satisfy some of the major municipalities and would have triggered further permit appeals, and it would be burdensome to the Department if widely used (possibly two full time senior engineers/senior environmental specialists, over a five year period, if all 250 facilities applied for load increases). By placing certain restrictions on who could apply for the increased mass limits (at least "x" number of violations in a five year period, or other criteria), the workload to the Department could be greatly reduced. However, on balance the Department rejected this approach due to the lack of acceptability to the major municipalities.
3. Remove all mass limits, except where required for municipalities discharging to water quality limited streams. The Department rejected this option. There are good and valid reasons to have mass limits for all municipalities, and the Department feels strongly that they should be retained.
4. Remove mass limits in the winter, or set them even higher than proposed. The Department rejected this option for reasons previously stated. Although there is less concern about pollutant loads in the winter due to higher assimilative capacities, there is still a need to track and limit the discharge of pollutants to public waters.
5. Allow higher mass limits for existing facilities in the winter, based on design average wet weather flow. This is the recommended alternative.
6. Require no inflow or infiltration reduction effort as part of the mass limit rule. In this proposed rule, significant increases in winter mass limits will be permitted, which will remove all or most incentive for keeping sewer systems from further deterioration. The Department believes that some level of flow regulation is reasonable.



7. Require stringent inflow and infiltration reduction efforts, to minimize the discharge of pollutants. Infiltration reduction in particular can be difficult and costly to effect. As the increased discharges from infiltration generally occur in the winter, when assimilative capacity in receiving streams is generally greater, the high cost of a rigorous infiltration reduction program is probably not warranted.
8. Require inflow identification and removal. This is part of the proposed rule.
9. Specify exactly how mass limits for new facilities would be calculated. The Department is not yet ready to set this procedure. A technical advisory committee has been formed and should have a recommendation for the Commission's review in six months to a year. Until that time, the Department would prefer to set mass limits for any new facilities on a case-by-case basis, in consultation with the affected municipality.
10. Set mass limits for new facilities on a case-by-case basis. This is part of the proposed rule.
11. Set mass limits for new facilities on the same basis as existing facilities. The Department believes that the proposed winter mass limits for existing facilities will be much larger than needed for most facilities. These higher limits are being proposed in part because the Department does not have the resources to determine individual mass limits. However, for new facilities, the Department will already have to do a detailed engineering review and the additional work to determine individual mass limits should not be overly burdensome.
12. Require that all mass load increases resulting from this proposed rule undergo detailed evaluations as specified in OAR 340-41-026. This was rejected by the Department because of work load considerations.
13. Exempt winter mass load increases from OAR 340-41-026. This is part of the recommended rule. The impact from the winter discharges is not expected to be great, based on the increased assimilative capacity in the winter.

**DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:**

The Department recommends that the rule be adopted as proposed for reasons previously discussed, with the following minor changes (see Attachment E for revised proposed rule):

1. Clarification is added to section (9)(a) to make clear that existing facilities are covered by that section.
2. Section (9)(a)(G) is amended to exclude cities having combined sewer systems from having to comply with the inflow reduction requirement. Cities with combined sewer systems either now have or will soon have comprehensive permits and Stipulation and Final Orders to address inflow, and further possibly conflicting inflow removal requirements under this rule are not warranted. The reference to "infiltration" in this section of the rule is removed - the Department will not be requiring that municipalities instigate an infiltration control program under this proposed rule.
3. Section (9)(e) is amended to give municipalities a choice of mass limits as proposed in the rule, or based on standard calculations using average dry weather flows. The rule as originally drafted gave the existing permitted mass limits as the alternate choice. The Department is proposing this change to make all mass limits consistent. Over the past twenty years, many variations in exceptions have been granted, many with no documentation and no known justification. The proposed change will restore some consistency. If there are some facilities that need mass limits that are determined in some other manner, the proposed rules allows them to apply to the Commission for an exception (Section (9)(f)).
4. Section (9)(f) is modified to make clear that ability to meet mass limits at projected flows at design capacity will be used, rather than current flows, to determine whether or not a increased mass load can be approved by the Commission.
5. Section (9)(a)(H) is modified to include different cities that are exempt from the other provisions of Section 9(a) for existing facilities. A further review of Department files showed that most of the cities listed do not need the exception, since the facilities will qualify under Section 9(b) for new facilities. The cities added are those that were initially overlooked - most of them received mass load increases from the Commission, and the Department believes these loads are still appropriate. The cities to be added are Athena, Elgin, Adair Village, Halsey, Harrisburg,

Independence, and Carlton. The cities deleted are Siletz, Oakridge, Brookings, and Bay City. None of these cities have received engineering plan approval yet and therefore would fall under the rule provision for new facilities.

**CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:**

There are three key policies that are affected by this proposed rule:

1. Highest and best practicable treatment is required regardless of the assimilative capacity of the receiving stream - The proposed rule is generally consistent with this policy. Mass limits are retained, and for new facilities, the limits will be set strictly in accordance with this policy. For existing facilities, however, the limits are higher than those consistent with "highest and best". These higher limits are being proposed in part because the Department does not have the resources to do a case-by-case determination of mass limits for the 250 affected facilities. The higher limits occur in the winter, however, and the impact on the receiving streams is expected to be minor. The requirement of an inflow removal program is consistent with "highest and best".
2. Minimizing pollutant discharges and maintaining assimilative capacity - The discussion for "highest and best" above also pertains to this policy.
3. No mass load increases as a general policy (anti-degradation) - The proposed rule is contrary to this policy. However, the Department and Commission have traditionally been more concerned about load increases in the critical summer period, and the proposed rule will only affect winter discharges.

**ISSUES FOR COMMISSION TO RESOLVE:**

1. Is it reasonable to require that inflow be reduced in the winter when the flows directly translate into increased discharges of pollutants? Should this only be required when there is a instream standard violation or other serious public health or environmental impact?
2. Should the Commission grant across-the-board significant increases in winter discharge loads, particularly when the evaluation process set in OAR 340-41-026 is not followed?
3. Are the mass load increases proposed reasonable?

Meeting Date: July 23, 1992  
Agenda Item: B  
Page 15

**INTENDED FOLLOWUP ACTIONS:**

If adopted by the Commission, the Department intends to implement the proposed rule as permits come up for renewal, or as permit modifications are requested. The technical advisory committee will continue to meet and is expected to recommend a consistent approach for mass limits for new facilities. When that recommendation is available, the Department intends to amend this rule to specify mass limits for new facilities. In addition, the Department will proceed to settle the seven municipal permits that have been appealed and issue the twelve major municipal permits now pending.

Approved:

Section: Barbara A. Burton  
Division: Regelia Taylor  
Director: Stephanie Hellock, Acting

Report Prepared By: Barbara Burton

Phone: 229-6099

Date Prepared: July 7, 1992

BAB:crw  
MW\WC10\WC10402  
7-8-92

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

**IMPLEMENTATION PROGRAM APPLICABLE TO ALL BASINS****340-41-120**

- (1) No waste treatment and disposal facilities shall be constructed or operated and no wastes shall be discharged to public waters without obtaining a permit from the Department as required by ORS 468.740.
- (2) Plans for all sewage and industrial waste treatment, control, and disposal facilities shall be submitted to the Department for review and approval prior to construction as required by ORS 468.742.
- (3) Minimum design criteria for waste treatment and control facilities prescribed under this plan and such other waste treatment and controls as may be necessary to insure compliance with the water quality standards contained in this plan shall be provided in accordance with specific permit conditions for those sources or activities for which permits are required and the following implementation program:
  - (a) For new or expanded waste loads or activities, fully approved treatment or control facilities, or both shall be provided prior to discharge of any wastes from the new or expanded facilities or conduct of the new or expanded activity.
  - (b) For existing waste loads or activities, additional treatment or control facilities necessary to correct specific unacceptable water quality conditions shall be provided in accordance with a specific program and timetable incorporated into the waste discharge permit for the individual discharger or activity. In developing treatment requirements and implementation schedules for existing installations or activities, consideration shall be given to the impact upon the overall environmental

MW\WH5184  
July 24, 1992

quality including air, water, land use, and aesthetics.

- (c) Wherever minimum design criteria for waste treatment and control facilities set forth in this plan are more stringent than applicable federal standards and treatment levels currently being provided, upgrading to the more stringent requirements will be deferred until it is necessary to expand or otherwise modify or replace the existing treatment facilities. Such deferral will be acknowledged in the permit for the source.
  - (d) Where planning or design or construction of new or modified waste treatment and controls to meet prior applicable state or federal requirements is underway at the time this plan is adopted, such plans, design, or construction may be completed under the requirements in effect when the project was initiated. Timing for upgrading to meet more stringent future requirements will be as provided in section (3) of this rule.
- (4) Confined animal feeding operations shall be regulated pursuant to rules 340-41-005 through 340-51-080 in order to minimize potential adverse effect on water quality.
  - (5) Programs for control of pollution from non-point sources when developed by the Department, or by other agencies pursuant to Section 208 of Public Law 92-500 and approved by the Department, shall as applicable, be incorporated into this plan by amendment via the same process used to adopt the plan unless other procedures are established by law.
  - (6) Where minimum requirements of federal law or enforceable regulations are more stringent than specific provisions of this plan, the federal requirements shall prevail.
  - (7) Within framework of state-wide priority and available resources, the Department will monitor water quality within the basin for the purposes of evaluating conformance with the plan and developing information for future additions or updating.
  - (8) The EQC recognizes that the potential exists for conflicts between water quality management plans and

MW\WH5184  
July 24, 1992

the land use plans and resource management plans which local governments and other agencies must develop pursuant to law. In the event any such conflicts develop, it is the intent of the Department to meet with the local government or responsible agency to formulate proposed revisions to one or both so as to resolve the conflict. Revisions will be presented for adoption via the same process used to adopt the plan unless other specific procedures are established by law.

(9) The Department shall calculate and include effluent limits specified in pounds per day, which shall be the mass load limits for biochemical oxygen demand or carbonaceous biochemical oxygen demand and total suspended solids in National Pollutant Discharge Elimination System permits issued to all sewage treatment facilities. These limits shall be calculated as follows:

(a) Except as noted in section (H) of this rule, for facilities receiving engineering plans and specifications approval from the Department for new treatment facilities or treatment facilities expanding the average dry weather treatment capacity, prior to June 30, 1992:

(A) During periods of low stream flows (approximately May 1 through October 31), the monthly average mass load expressed as pounds per day shall not exceed the applicable monthly concentration effluent limit times the design average dry weather flow expressed in million gallons per day times 8.34 pounds per gallon. The weekly average mass load expressed as pounds per day shall not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day shall not exceed the monthly average mass load times 2.0.

(B) During the period of high stream flows (approximately November 1 through April 30), the monthly average mass load expressed as pounds per day shall not exceed the monthly concentration effluent limit times the design average wet weather flow expressed in million gallons per day times 8.34 pounds per gallon. The weekly average mass load expressed as pounds per

day shall not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day shall not exceed the monthly average mass load times 2.0.

- (C) On any day that the daily flow to a sewage treatment facility exceeds the lesser of the hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit shall not apply. The permittee shall operate the treatment facility at the highest and best practicable treatment and control.
- (D) The design average wet weather flow used in calculating mass loads shall be approved by the Department in accordance with prudent engineering practice and shall be based on a facility plan approved by the Department, engineering plans and specifications approved by the Department, or an engineering evaluation. The permittee shall submit documentation describing and supporting the design average wet weather flow with the permit application, application for permit renewal, or modification request, or upon request by the Department. The design average wet weather flow is defined as the average flow between November 1 and April 30 when the sewage treatment facility is projected to be at design capacity for that portion of the year.
- (E) Mass loads assigned as described in sections (a)(B) and (a)(C) in this rule will not be subject to OAR 340-41-026(3).
- (F) Mass loads as described in this rule will be included in permits upon renewal, or upon permit modification request.
- (G) Within 180 days after permit renewal or modification, permittees receiving higher mass loads under this rule shall submit to the Department for review and approval a proposed program and time schedule for identifying and reducing infiltration and inflow. The program shall consist of the



following:

- (i) Identification of all overflow points and verification that sewer system overflows are not occurring up to a 24-hour, 5-year storm event or equivalent;
- (ii) Monitoring of all pump station overflow points; and
- (iii) A program for identifying and removing inflow sources into the sewer system over which the permittee has legal control; and
- (iv) For those permittees not having the necessary legal authority for all portions of the sewer system discharging into the permittee's sewer system or treatment facility, a program and schedule for gaining legal authority to require inflow reduction and a program and schedule for removing inflow sources.

Within one year after the Department's approval of the program, the permittee shall begin implementation of the program.

- (H) Section (a)(A) through (G) shall not apply to the cities of Siletz, Oakridge, Brookings, Bay City, and Sweet Home. Mass load limits have been individually assigned to these facilities.
- (b) For new sewage treatment facilities or treatment facilities expanding the average dry weather treatment capacity, and receiving engineering plans and specifications approval from the Department after June 30, 1992, the mass load limits shall be calculated by the Department based on the proposed treatment facility capabilities and the highest and best practicable treatment to minimize the discharge of pollutants.
- (c) Mass load limits as defined in this rule may be replaced by more stringent limits if required by waste load allocations established in accordance with a TMDL for treatment facilities discharging to

water quality limited streams, or if required to prevent or eliminate violations of water quality standards.

- (d) In the event that the design average wet weather flow or the hydraulic secondary treatment capacity is not known or has not been approved by the Department at the time of permit issuance, the permit shall include as interim mass load limits the mass load limits in the previous permit issued to the permittee for the treatment facility. The permit shall include a requirement that the permittee submit to the Department the design average wet weather flow and hydraulic secondary treatment capacity within twelve months after permit issuance. Upon review and approval of the design flow information, the Department will modify the permit and include mass load limits as described in section (a) of this rule.
- (e) Each permittee with existing sewage treatment facilities otherwise subject to Section (a) of this rule may choose to retain as effluent limits the mass load limits included in its NPDES permit in effect as of the date this rule becomes effective. In the event that existing mass load limits are retained by the permittee, the terms and requirements of Section (a) shall not apply.
- (f) The Commission may grant exceptions to section (a) of this rule. In allowing increased discharged loads, the Commission shall make the findings specified in OAR 340-41-026(3) for waste loads, and in addition shall make the following findings:
- (i) That mass loads as calculated in section (a) cannot be achieved with the existing treatment facilities operated at maximum efficiency; and
- (ii) That there are no practicable alternatives to achieving the mass loads as calculated in section (a).

NOTICE OF PROPOSED RULEMAKING HEARING

AGENCY: DEPARTMENT OF ENVIRONMENTAL QUALITY, WATER QUALITY DIVISION

The above named agency gives notice of hearing.

HEARING TO BE HELD:

July 1, 1992, 2:00 P.M.  
Department of Environmental Quality  
811 SW Sixth Avenue, Portland, Oregon  
Conference Room 3A

HEARINGS OFFICER: Tom Lucas

Pursuant to the statutory authority of ORS 468B.030, the following action is proposed:

AMEND: Water quality rule as found in Oregon Administrative Rules (OAR) 340-41-120.

[X] No prior notice given.

SUMMARY:

The Department proposes to amend water quality rules to specify that mass effluent limitations for biochemical oxygen demand (BOD) and total suspended solids will be included in permits for domestic wastewater treatment systems that discharge to public waters. In addition, the manner in which these limits are to be calculated is specified.

Interested persons may comment on the proposed rule orally or in writing at the hearing. Written comments received by 5:00 PM on July 1, 1992, will be considered. Written comments should be sent to and copies of the proposed rulemaking may be obtained from:

AGENCY: Oregon Department of Environmental Quality  
ADDRESS: 811 SW Sixth Avenue, Portland, OR 97204  
ATTENTION: Barbara Burton  
PHONE: 229-6099

Thomas J. Lucas      5/15/92  
Signature    Date

## STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the Environmental Quality Commission's intended action to adopt a rule.

### (1) Legal Authority

Oregon Revised Statutes (ORS) 468B.030 allows the Environmental Quality Commission to establish effluent limitations by rule.

### (2) Need for the Rule

The Department currently assigns mass limitations to domestic wastewater treatment facilities under general rules regarding limiting of mass loads (OAR 340-41-026) and the requirement for the highest and best practicable treatment of wastewaters (OAR 340-41-445(1) for the Willamette Basin and the same language for other river basins). The Department used a fixed formula for determining the mass limits, with exceptions given on a case-by-case basis. The Department believes that a different basis for determining the mass limits is now warranted, and further believes that mass limits should be specified in rule form including the formula for calculation. This will give more certainty to the regulated communities regarding mass limits.

### (3) Principal Documents Relied Upon in this Rulemaking

Oregon Revised Statutes 468B.030.

This document is available for review during normal business hours at the Department's office, 811 SW Sixth Avenue, Portland, Oregon.

## FISCAL AND ECONOMIC IMPACT

### 1. Municipalities such as cities, service districts and sanitary districts.

The proposed rule change will allow municipalities to discharge increased quantities of pollutants in the November through April winter season. The increased permit limits may have some fiscal impact on municipalities. The overall fiscal impact is not expected to be significant, but will reduce the cost to municipalities. First, there will probably be fewer violations of mass limits, which will mean that there would be fewer potential civil penalties assessed by the Department or the U.S. Environmental Protection Agency, and fewer potential third party lawsuits for permit violations. Secondly, there may be a reduced cost when a new plant is constructed, since some of the treatment units could be smaller. The proposed higher mass limits are not expected to extend the useful life of the treatment plant, and will therefore not have a resultant fiscal impact. Finally, the higher mass limits may reduce the cost of operating and maintaining both the sewerage collection system and the treatment plant.

Reduction in number of violations - A review of Department records of major municipal dischargers over a three year period showed that mass limit violations are now unusual, and will become more so with this proposed rule change. There were 76 individual violations of mass limits where other effluent limits such as concentration limits were also violated. Since the Department by practice does not issue separate civil penalties for each parameter violated, these permit violations would not have resulted in additional civil penalties. There were 40 mass limit violations where no other effluent limit was violated, for an average of one per municipality during the three year review period. These violations are subject to Department penalties, but no civil penalties were issued for these violations. The Department does not routinely issue civil penalties for isolated minor violations. No fines were issued by EPA for mass limit violations in this period. No third party lawsuits were filed for mass limit violations in this period.

The Department can issue civil penalties of up to \$10,000 per violation. EPA can assess up to \$25,000 per violation. Third parties bringing suit against a municipality can claim attorney fees in addition to the \$25,000/violation. This potential liability will be reduced if the effluent limits are raised for the winter, since that is the season when most mass limit violations now occur.

Reduced construction costs when treatment plants are built - Treatment plants are designed to meet all effluent limits, including mass limits, concentration limits, bacteria limits, and percent removal requirements. Review of violations recorded, and review of what types of effluent violations trigger plant upgrades, show that mass limits are not now unduly stringent. More violations of concentration limits than mass limits now occur. It is not clear what, if any, impact the increased mass limits would have on construction costs. If there is an impact, it will be to reduce the cost of construction.

No impact on extending "life" of treatment plant - The Department reviewed all new wastewater treatment plants, and plant expansions and upgrades over a four year period. Of the 22 new plants or expansions, 17 were triggered by concentration and mass limit violations (and sometimes additional effluent violations), two were triggered by an inadequate receiving stream (not effluent violations), 2 were new sewer systems replacing failing on-site sewage disposal systems, and one was to eliminate raw sewage overflows. None were the result of mass limit violations alone. These results are consistent with Department experience - when a plant is overloaded or has a significant design flaw, then there are repeated violations of concentration limits, mass limits, and often bacteria limits.

Based on this information, the Department concludes that increasing mass limits will not extend the life of existing wastewater treatment plants, and therefore in this regard will not reduce the fiscal impact on municipalities.

Impact on operational costs - The higher mass limits may result in reduced sewer system maintenance which will reduce costs to the municipalities, but may result in increased treatment costs because of increased flows (from leaking sewers). The higher mass limits may result in reduced costs for operator salaries, either by allowing less skilled (and therefore less highly paid) or fewer operators since the effluent limits may be easier to attain. The increased mass limits may result in reduced operation costs for sludge management, since more solids may be discharged to the receiving stream rather than retained and further treated as sludge. The magnitude of these fiscal impacts is not known.

2. Small Business.

Some small privately owned wastewater treatment plants will be affected by this proposed rule. Examples of these facilities would be wastewater treatment plants serving mobile home parks or resort areas. The fiscal impact would be the same as described above for municipalities.

Other small businesses may discharge wastewater to municipal sewerage collection systems, for treatment by the municipality. Those small businesses may be affected in a minor way, by cost savings by the municipality being passed along to ratepayers. The impact is not expected to be significant.

3. Large Business.

Very few large businesses would be affected by this rule. There are a few large industrial facilities that have separate, small domestic wastewater treatment facilities. The impacts on large businesses with these treatment plants would be the same as for municipalities.

As with small businesses, large businesses discharging to municipal sewerage collection systems might also see minor cost savings from the municipalities.

4. Other State Agencies.

Some state agencies operate small wastewater treatment facilities serving rest areas or parks. These facilities would be impacted in a similar manner to municipalities.

*Oregon Department of Environmental Quality*

## **A CHANCE TO COMMENT ON...**

**MASS LOAD LIMITS FOR SEWAGE TREATMENT FACILITIES**

Notice Issued: June 1, 1992  
 Comments Due: July 1, 1992  
 Public Hearing: July 1, 1992

### **WHO IS AFFECTED:**

Permit holders and operators of all domestic wastewater treatment system having a National Pollutant Discharge Elimination System discharge permit, and all persons using Oregon public waters.

### **WHAT IS PROPOSED:**

The Department is proposing to amend water quality rules to specify the mass load limits for biochemical oxygen demand (BOD) and total suspended solids (TSS) assigned to domestic wastewater treatment plants.

### **WHAT ARE THE HIGHLIGHTS:**

The Department of Environmental Quality has included mass load limits for BOD and TSS in domestic wastewater permits since the late 1960's. These limits have been calculated using a formula based on the design average dry weather flow, and have been included in discharge permits issued for treatment plants. Exceptions have been made by the Department, on a case-by-case basis, for those few sewer systems with very high flows that were not able to meet the mass limits as they are normally calculated.

The Department is proposing to adopt a rule specifically for mass load limits, and to specify the formula used to calculate mass limits for existing domestic wastewater systems. The same formula will be used for summer mass limits as is currently in use, but the winter limits will be increased. The new formula for the winter limits will be based on the design average wet weather flow, and will suspend the daily mass limit for days when flows into the treatment facility are extremely high. Since the design average wet weather flow will be different for each treatment facility, the amount of the mass load increase will vary also.



811 S.W. 6th Avenue  
 Portland, OR 97204

11/1/86

### **FOR FURTHER INFORMATION:**

Contact the person or division identified in the public notice by calling 229-5696 in the Portland area. To avoid long distance charges from other parts of the state, call 1-800-452-4011.



Although this rule change will allow substantial increases in pollutant discharges, the increase will be during the winter discharge season of November through April. The impact on receiving streams is not expected to be significant. Oregon's streams have much higher assimilative capacities in the winter, due to much higher flows to provide dilution, colder temperatures which delay decomposition of effluent in the receiving stream, and reduced sunlight which could stimulate harmful plant growth in streams with elevated nutrient levels.

**HOW TO COMMENT:**

Copies of the complete proposed rule package may be obtained from the Water Quality Division in Portland (811 SW 6th Ave) or the regional office nearest you. For further information, contact Barbara Burton at 229-6099.

A public hearing will be held before a hearings officer at the following time and location:

July 1, 1992, 2:00 PM  
Department of Environmental Quality Offices  
Conference Room 3A  
811 SW 6th Avenue  
Portland, Oregon

Oral and written comments will be accepted at the public hearing. Written comments may be sent to the DEQ, Water Quality Division, 811 SW 6th Avenue, Portland, Oregon 97204, and must be received by no later than 5:00 PM, July 1, 1992.

**WHAT IS THE NEXT STEP:**

The Environmental Quality Commission may adopt rule amendments identical to the ones proposed, adopt modified rules as a result of testimony received, or may decline to adopt rules. The Commission will consider and act upon the proposed rule amendments at its July 24, 1992 meeting.

Attachments: Location of regional DEQ offices  
Proposed rule

DEQ REGIONAL OFFICES LOCATIONS  
COPIES OF DOCUMENTS CAN BE VIEWED AND COPIED  
AT THE FOLLOWING LOCATIONS

HEADQUARTERS OFFICE  
811 SW SIXTH AVENUE  
PORTLAND, OR 97204

EASTERN REGION OFFICE  
700 SE EMIGRANT, SUITE 330  
PENDLETON, OR 97801

CENTRAL REGION OFFICE  
2146 NE 4TH  
BEND, OR 97701

NORTHWEST REGION OFFICE  
1500 SW FIRST AVENUE, SUITE 750  
PORTLAND, OR 97201

NORTHWEST REGION, ASTORIA BRANCH OFFICE  
CLATSOP COUNTY COURTHOUSE  
749 COMMERCIAL  
ASTORIA, OR 97103

WILLAMETTE VALLEY REGION OFFICE  
750 FRONT STREET, NE, SUITE 120  
SALEM, OR 97310

SOUTHWEST REGION OFFICE  
201 WEST MAIN STREET, SUITE 2-D  
MEDFORD, OR 97501

SOUTHWEST REGION, ROSEBURG BRANCH OFFICE  
1937 WEST HARVARD BLVD.  
ROSEBURG, OR 97479

SOUTHWEST REGION, GRANTS PASS BRANCH OFFICE  
510 NW 4TH, ROOM 76  
GRANTS PASS, OR 97526

SOUTHWEST REGION, COOS BAY BRANCH OFFICE  
340 N. FRONT STREET  
COOS BAY, OR 97420

MW\WC10\WC10243.5

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The portions of the text which are underlined in **bold italics** are additions to the draft rules made in response to public comment.

**IMPLEMENTATION PROGRAM APPLICABLE TO ALL BASINS**

**340-41-120**

- (1) No waste treatment and disposal facilities shall be constructed or operated and no wastes shall be discharged to public waters without obtaining a permit from the Department as required by ORS 468.740.
- (2) Plans for all sewage and industrial waste treatment, control, and disposal facilities shall be submitted to the Department for review and approval prior to construction as required by ORS 468.742.
- (3) Minimum design criteria for waste treatment and control facilities prescribed under this plan and such other waste treatment and controls as may be necessary to insure compliance with the water quality standards contained in this plan shall be provided in accordance with specific permit conditions for those sources or activities for which permits are required and the following implementation program:
  - (a) For new or expanded waste loads or activities, fully approved treatment or control facilities, or both shall be provided prior to discharge of any wastes from the new or expanded facilities or conduct of the new or expanded activity.
  - (b) For existing waste loads or activities, additional treatment or control facilities necessary to correct specific unacceptable water quality conditions shall be provided in accordance with a specific program and timetable incorporated into the waste discharge permit for the individual discharger or activity. In developing treatment requirements and implementation

schedules for existing installations or activities, consideration shall be given to the impact upon the overall environmental quality including air, water, land use, and aesthetics.

- (c) Wherever minimum design criteria for waste treatment and control facilities set forth in this plan are more stringent than applicable federal standards and treatment levels currently being provided, upgrading to the more stringent requirements will be deferred until it is necessary to expand or otherwise modify or replace the existing treatment facilities. Such deferral will be acknowledged in the permit for the source.
- (d) Where planning or design or construction of new or modified waste treatment and controls to meet prior applicable state or federal requirements is underway at the time this plan is adopted, such plans, design, or construction may be completed under the requirements in effect when the project was initiated. Timing for upgrading to meet more stringent future requirements will be as provided in section (3) of this rule.
- (4) Confined animal feeding operations shall be regulated pursuant to rules 340-41-005 through 340-51-080 in order to minimize potential adverse effect on water quality.
- (5) Programs for control of pollution from non-point sources when developed by the Department, or by other agencies pursuant to Section 208 of Public Law 92-500 and approved by the Department, shall as applicable, be incorporated into this plan by amendment via the same process used to adopt the plan unless other procedures are established by law.
- (6) Where minimum requirements of federal law or enforceable regulations are more stringent than specific provisions of this plan, the federal requirements shall prevail.
- (7) Within framework of state-wide priority and available resources, the Department will monitor water quality within the basin for the purposes of evaluating conformance with the plan and developing information for future additions or updating.

- (8) The EQC recognizes that the potential exists for conflicts between water quality management plans and the land use plans and resource management plans which local governments and other agencies must develop pursuant to law. In the event any such conflicts develop, it is the intent of the Department to meet with the local government or responsible agency to formulate proposed revisions to one or both so as to resolve the conflict. Revisions will be presented for adoption via the same process used to adopt the plan unless other specific procedures are established by law.
- (9) The Department shall calculate and include effluent limits specified in pounds per day, which shall be the mass load limits for biochemical oxygen demand or carbonaceous biochemical oxygen demand and total suspended solids in National Pollutant Discharge Elimination System permits issued to all sewage treatment facilities. These limits shall be calculated as follows:
- (a) Except as noted in section (H) of this rule, for existing facilities and for facilities receiving engineering plans and specifications approval from the Department for new treatment facilities or treatment facilities expanding the average dry weather treatment capacity, prior to June 30, 1992:
- (A) During periods of low stream flows (approximately May 1 through October 31), the monthly average mass load expressed as pounds per day shall not exceed the applicable monthly concentration effluent limit times the design average dry weather flow expressed in million gallons per day times 8.34 pounds per gallons. The weekly average mass load expressed as pounds per day shall not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day shall not exceed the monthly average mass load times 2.0.
- (B) During the period of high stream flows (approximately November 1 through April 30), the monthly average mass load expressed as pounds per day shall not exceed the monthly concentration effluent limit times the design average wet weather flow expressed in million gallons per day times 8.34 pounds per

gallon. The weekly average mass load expressed as pounds per day shall not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day shall not exceed the monthly average mass load times 2.0.

(C) On any day that the daily flow to a sewage treatment facility exceeds the lesser hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit shall not apply. The permittee shall operate the treatment facility at highest and best practicable treatment and control.

(D) The design average wet weather flow used in calculating mass loads shall be approved by the Department in accordance with prudent engineering practice and shall be based on a facility plan approved by the Department, engineering plans and specifications approved by the Department, or an engineering evaluation. The permittee shall submit documentation describing and supporting the design average wet weather flow with the permit application, application for permit renewal, or modification request, or upon request by the Department. The design average wet weather flow is defined as the average flow between November 1 and April 30 when the sewage treatment facility is projected to be at design capacity for that portion of the year.

(E) Mass loads assigned as described in sections (a)(B) and (a)(C) in this rule will not be subject to OAR 340-41-026(3).

(F) Mass loads as described in this rule will be included in permits upon renewal, or upon permit modification request.

(G) Within 180 days after permit renewal or modification, permittees receiving higher mass loads under this rule and having a separate sanitary sewer system shall submit to the Department for review and approval a proposed program and time

schedule for identifying and reducing inflow. The program shall consist of the following:

- (i) Identification of all overflow points and verification that sewer system overflows are not occurring up to a 24-hour, 5-year storm event or equivalent;
- (ii) Monitoring of all pump station overflow points; and
- (iii) A program for identifying and removing all inflow sources into the permittees sewer system over which the permittee has legal control; and
- (iv) For those permittees not having the necessary legal authority for all portions of the sewer system discharging into the permittee's sewer system or treatment facility, a program and schedule for gaining legal authority to require inflow reduction and a program and schedule for removing inflow sources.

Within one year after the Department's approval of the program, the permittee shall begin implementation of the program.

(H) Section (a)(A) through (G) shall not apply to the cities of Athena, Elgin, Adair Village, Halsey, Harrisburg, Independence, Carlton ~~(Siletz, Oakridge, Brookings, Bay City,)~~ and Sweet Home. Mass load limits have been individually assigned to these facilities.

(b) For new sewage treatment facilities or treatment facilities expanding the average dry weather treatment capacity, and receiving engineering plans and specifications approval from the Department after June 30, 1992, the mass load limits shall be calculated by the Department based on the proposed treatment facility capabilities and the highest and best practicable treatment to minimize the discharge of pollutants.

- (c) Mass load limits as defined in this rule may be replaced by more stringent limits if required by waste load allocations established in accordance with a TMDL for treatment facilities discharging to water quality limited streams, or if required to prevent or eliminate violations of water quality standards.
- (d) In the event that the design average wet weather flow or the hydraulic secondary treatment capacity is not known or has not been approved by the Department at the time of permit issuance, the permit shall include as interim mass load limits the mass load limits in the previous permit issued to the permittee for the treatment facility. The permit shall also include a requirement that the permittee shall submit to the Department the design average wet weather flow and hydraulic secondary treatment capacity within twelve months after permit issuance. Upon review and approval of the design flow information, the Department will modify the permit and include mass load limits as described in section (a) of this rule.
- (e) Each permittee with existing sewage treatment facilities otherwise subject to Section (a) of this rule may choose mass load limits calculated as follows: The monthly average mass load expressed as pounds per day shall not exceed the applicable monthly concentration effluent limit times the design average dry weather flow expressed in million gallons per day times 8.34 pounds per gallon. The weekly average mass load expressed as pounds per day shall not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day shall not exceed the monthly average mass load times 2.0. In the event that existing mass load limits are retained by the permittee, the terms and requirements of Section (a) shall not apply.
- (f) The Commission may grant exceptions to section (a) of this rule. In allowing increased discharged loads, the Commission shall make the findings specified in OAR 340-41-026(3) for waste loads, and in addition shall make the following findings:
- (i) That mass loads as calculated in section (a) cannot be achieved with the existing treatment facilities operated at maximum efficiency at projected design flows; and



(ii) That there are no practicable alternatives to achieving the mass loads as calculated in section (a).

ATTACHMENT F

Statutory Authority

Oregon Revised Statute (ORS) 468.725

**468.725 Effluent limitations.** In relation to the waters of the state, the commission by rule may establish effluent limitations, as defined in Section 502 of the Federal Water Pollution Control Act, as amended by Public Law 92-500, October 18, 1972, and other minimum requirements for disposal of wastes, minimum requirements for operation and maintenance of disposal systems, and all other matters pertaining to standards of quality for the waters of the state. The commission may perform or cause to be performed any and all acts necessary to be performed by the state to implement within the jurisdiction of the state the provisions of the Federal Water Pollution Control Act of October 18, 1972, and Acts amendatory thereof or supplementary thereto, and federal regulations and guidelines issued pursuant thereto. [Formerly 449.081]

ATTACHMENT G

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE MEMORANDUM

DATE: July 1, 1992

TO: Environmental Quality Commission

FROM: Tom Lucas

SUBJECT: Hearing on Proposed Mass Load Limits Held July 1,  
1992

A public hearing was held at 2:00 PM, July 1, 1992 to receive oral or written testimony on a proposed rule change. Tom Lucas with the Department served as hearings officer. In addition, written testimony was received on the proposed rule change during the public comment period of June 1, 1992 and closing at 5:00 PM, July 1, 1992.

SUMMARY OF TESTIMONY RECEIVED

1. Councilman Mel Winkleman, City of Medford - Measure 5 imposes major revenue restrictions on local governments. Priorities need to be established in environmental programs, and rule making should only occur if there is a real need for the rule and the costs of compliance are understood.
2. Jim Hill, City of Medford - Mass limits should only be imposed based on what the receiving stream can assimilate, not on what the treatment plant is capable of producing. Other rules exist to adequately address the concerns that the Department has expressed as reasons to have mass limits. Mass limits are not needed. If there are mass limits, then mass limits for new facilities should be the same as mass limits for existing facilities.

G - 1

3. Gary Eide, City of Salem - The proposed rule is a significant improvement over the way that mass limits have been calculated in the past. While it allows much higher mass limits during the winter, the actual instances of higher discharges will be when the receiving stream can assimilate it.
4. Gary Krahmer, Unified Sewerage Agency - Fully supports rule as proposed, with one non-substantive language change suggested.
5. Mark Yeager, City of Albany - Compliance with the mass limits as previously calculated would have cost municipalities millions of dollars. The proposed rule is acceptable, but preference is given to having no mass load limits at all except for water quality limited streams.
6. Dan Helmick, Clackamas County - Compliance with the mass limits as previously calculated would have cost municipalities millions of dollars. The proposed rule is acceptable, but preference is given to having no mass load limits at all except for water quality limited streams.
7. Katherine Schacht, Metropolitan Wastewater Management Commission - MWMC generally supports the proposed rule. The selection of 1.5 and 2 to multiply the monthly mass load limit, in order to calculate the weekly and daily limit is objected to as being non-scientific. However, the higher base monthly loads proposed and the dropping of the daily limits at high flows keeps this flaw from being significant in terms of impact on compliance. Concern is expressed regarding how the Department will calculate mass loads for new facilities, and suggest that the Department consider this an important issue to be resolved in the near future. Preference for separating mass loads from infiltration and inflow control is expressed. Some requests for clarification of terms used are made.
8. Bert Teitzel, City of Newberg - The City supports the proposed rule.
9. Jerry Minor, KCM, Inc. - The company supports the proposed rule. Extremely low mass loads for the winter are expensive to achieve.

10. Karen Skiles, City of The Dalles - The City generally supports the proposed rule as an interim step, but believes that mass limits should be solely water quality based. Two changes are suggested - that inflow be evaluated but not necessarily removed, and that the procedures for determining mass limits for new facilities be specified.
11. Dave Leonard, Douglas County Public Works - The County supports the proposed rule. However, objection is still made to having mass limits at all, and in particular to having daily mass limits.
12. Garry Ott, City of Gresham - The City supports the proposed rule. However, the term "highest and best practicable treatment" used in the section on setting mass limits for new facilities should be further defined, and should be linked to basin design standards and include an economic component.
13. Kent Squires, Oak Lodge Sanitary District - The District is opposed to the rule and to mass limits in general except where required on a TMDL stream. Some of the Department's stated reasons for having mass limits, infiltration/inflow control and requiring proper operation, can be dealt by the Department by other means. The mass limits, even in the proposed rules, subject municipalities to significant risk of violation. Requiring municipalities to minimize discharges if there is any cost associated is not reasonable without similar regulation of other sources of pollutants, since there will be little noticeable impact on water quality. Mass limits, if assigned, should be delayed until after the Willamette River study determines the assimilative capacity of the River.
14. Cathryn Collis, City of Portland - The City generally supports the proposed rule. Concern is expressed regarding mandatory inflow reduction for all municipalities. Rather, each municipality should be evaluated individually, and the water quality impacts determined before requiring inflow reduction. Clarification on the term "hydraulic capacity" was requested.

15. Terry Smith, Oregon Association of Clean Water Agencies - The Association generally supports the proposed rule for mass load limits. However, in the long run the Association believes that mass load limits should be assigned (if at all) based on the assimilative capacity of the receiving stream, and not on the treatment capability of the facility. The proposed rules will not result in any noticeable decrease in water quality. The manner in which the existing mass limits are calculated would have cost the municipalities millions of dollars to comply with, for violations that may occur only a few days per year (\$180 million for the seven facilities appealing permits last year). The Department has given several reasons for having mass load limits, and none of them are valid or they can be addressed in other ways using other regulations. Objection is made to the use of 1.5 and 2 as multiplying factors to determine weekly and daily limits from the monthly limit, however the use of these factors is acceptable only because of the other portions of the rule giving higher monthly limits and suspending daily limits under high flow conditions. The Association proposes alternate language for "hydraulic capacity". Clarification for the term "highest and best practicable treatment" is requested. Clarification is requested for the term "design capacity". Will the Department consider different design average wet weather flow figures, if the original figures were determined based on an unrealistic estimate of infiltration and inflow removal? One year to begin implementation of inflow reduction may be too short for some municipalities, as the budgeting process and hiring new staff may take longer than that. Does the inflow reduction program envisioned by the Department allow the continued use of treatment facilities for the occasional contaminated runoff, as the Association believes should be allowed? For new facilities, the same method for calculating mass limits as for existing facilities should be used, and it should be scientific.

Memo to: Environmental Quality Commission  
July 1, 1992  
Page 5

16. Thomas Penpraze, City of Corvallis - The City generally supports the proposed rule. However, the rules do not distinguish between municipalities with separate sewer systems, and those few like Corvallis that have combined sewer systems, and these types of systems should not be treated the same. The inflow reduction plan should afford combined sewer systems the flexibility to look at other alternatives than inflow removal (sewer separation), such as interim storage for storm flows that could then be transported for treatment when the storm is over. Also, the requirement for inflow reduction under this rule do not mesh with the proposed Order the City and Department are developing to deal with the combined sewer overflows.

ATTACHMENT H

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE MEMORANDUM

DATE: July 8, 1992

TO: Environmental Quality Commission

FROM: Barbara Burton

SUBJECT: Response to Comments Received During Public Comment  
Period - Proposed Mass Load Limits Rule

The following summarizes the significant issues raised during the public comment period, and the Department's response.

1. Mass load limits should be assigned based on the assimilative capacity of the receiving stream, not based on what the treatment plant is capable of achieving.

Department response: Many commenters included this in their testimony, and this continues to be a significant departure from the Department's and Commission's approach to pollution control. The Department continues to follow the Oregon Legislature's and Commission's direction that:

- Pollution is to be minimized - "Pollution of any of the waters of the state is declared to be not a reasonable or natural use of such waters and to be contrary to the public policy of the State of Oregon..." [ORS 468.715]

- Assimilative capacity is a precious resource to be preserved and thoughtfully assigned - "Oregon's water quality management policies and programs recognize that Oregon's water bodies have a finite capacity to assimilate waste. The strategy that has been followed in stream management has hastened the development and application of treatment technology that would not otherwise have occurred. As a result, some waters in Oregon have assimilative capacity above that which would exist if only the minimum



level of waste treatment was achieved. This unused assimilative capacity is an exceedingly valuable resource that enhances in-stream values specifically, and environmental quality generally. Allocation of any unused assimilative capacity should be based on explicit criteria." [OAR 340-41-026(1)(b)]

- Wastewater treatment plants are to be properly operated at their "highest and best practicable" level, regardless of other effluent limits - "Notwithstanding the water quality standards contained below, the highest and best practicable treatment and/or control of wastes, activities, and flows shall in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels." [OAR 340-41-445(1) for the Willamette Basin, identical language in other basin rules.]

Mass limits for municipalities are technology based, in that they reflect a minimum expectation of what a well designed and operated treatment facility can achieve, regardless of the condition of the receiving stream. The Department continues to believe that effluent limits should be set that are high enough to be consistently achievable at well-designed and operated treatment facilities, and yet stringent enough to require good maintenance and operation. The proposed mass load limits do this. Setting much higher limits based on some streams having greater assimilative capacity is not consistent with minimizing pollution and preserving Oregon's waters.

2. Mass limits should only be assigned on streams that are water quality limited and have Total Maximum Daily Loads (TMDL's) assigned, and the reasons given by the Department for having mass limits are either not valid or can be addressed in other ways. In addition, daily limits should not be required. Several commenters raised these related issues, citing federal rules that only require mass loads on publicly owned treatment works on TMDL streams.

Department response: It is true that under federal rules, mass loads are only assigned to municipal treatment plants discharging to water quality limited streams. However, NPDES permits are both federal and state permits, and as such include both federal and state limits and conditions. Oregon can and does have requirements beyond the minimum set for the entire country. The Department has used mass load limits for almost 25 years as technology based limits, which are limits that require good maintenance and operation of well designed treatment plants regardless of the condition of the receiving stream. These limits are water quality related in that they minimize the discharge of pollutants. This is consistent with direction given by the Oregon Legislature and Environmental Quality Commission, in pursuit of minimizing pollution and maintaining Oregon waters in the most natural state reasonably possible.

The Department has had many meetings with officers of the Oregon Association of Clean Water Agencies (Oregon AWCA), and with individual municipalities, where we have discussed mass limits. In addition, there has been some correspondence where the Department also presented why mass load limits are needed and appropriate. The testimony submitted by Oregon AWCA does not fully reflect the reasons the Department continues to support mass load limits. The following briefly describes the principal reasons the Department believes mass limits are important:

- Mass limits allow the tracking and control of pollutant loads on streams, and the gradual "creeping up" of waste loads on a stream can in part be prevented. It is true that merely requiring that mass loads be monitored would allow the Department to track the pollutant loads, however this would not allow the Department to control the loads on streams. By assigning mass loads and assuring that they are not exceeded, the Department is fulfilling it's role in protecting and preserving Oregon's waters. Assimilative capacity can be allocated based on a formal and thoughtful evaluation of each request for an increase, rather than on a "first come, first served" basis regardless of need for increase or alternatives available. Without mass load limits, this could not occur.

- Mass loads are the best indicators of pollutant loads on receiving streams. Mass loads continue to be the best indicators of pollutant load and impacts on receiving streams, and are used to bring water quality limited streams back into compliance. Effluent concentration levels do not fill this function and do not predict the impact of a discharge on the receiving stream.

- Mass limits can require good operation and maintenance of treatment plants, and minimize the discharge of pollutants to public waters.

- Mass limits are the only type of daily discharge limit for BOD and TSS, and serious excessive discharges could be allowed without this daily limit. Consequences of high daily discharge of BOD and TSS include potential public health impacts from poor chlorination (chlorine cannot penetrate large solids), unsightly conditions (dark brown and turbid), and can stress a stream depending on the dilution ratio and time of year. There are many, many operational or other causes of high daily discharges other than just emptying a lagoon in one day. The following is a very partial list of the types of operational decisions or events that could cause violations of daily limits but not weekly or monthly limits: pumping too much sludge too quickly to the digesters (too much high strength digester supernatant back to treatment plant); carrying too high sludge mass (through failure to haul sludge); receiving too many gallons of septage on one day; dumping a portion of a digester into the treatment plant, or outfall; getting a shock load of industrial wastes (failure to properly control dischargers into sewer system); temporary breakdown of equipment as a result of inadequate maintenance; failure to have properly trained operators on site every day when an easily correctable problem arises; and quick emptying of a clarifier or other treatment unit for maintenance.

These types of unfortunate occurrences would be very difficult for the Department to address through enforcement action using other regulations. The rule probably used would be the "highest and best practicable treatment" requirement included in the permits. However, this then opens up the argument as to what constitutes proper operation. Other testimony submitted by several municipalities and Oregon AWCA in effect rejects the concept of minimizing pollutants beyond that required by effluent limits, if there is any cost associated. Given this difference in perspective between many municipalities and the Department, it is particularly important to have numerical standards to rely on rather than have ongoing disputes on what constitutes proper operation. One of the purposes of numerical standards is to clearly establish for the permit holder and the Department what is acceptable, and what is not.

Mass load limits encourage and require good maintenance of sewer systems, by requiring that excessive flows be reduced. They also prevent attaining compliance with concentration limits by diluting the influent. The manner in which the mass load limits have previously been calculated did in fact encourage sewer system maintenance. However, the proposed mass limits effectively removes this as a reason to have mass limits, since the winter time limits (when leaky sewer systems have the most impact) are greatly increased. Regarding possible attaining of compliance with concentration limits through dilution, if there were no mass limits, there appears to have been some mis-communication. The Department never thought municipalities would pump drinking water or other water into sewer systems solely in order to comply with concentration limits through dilution. Rather, the dilution would come through a failure to remove direct connections with streams (some cities such as Portland do direct intermittent streams into their combined sewer system) and with storm water, or to allow further such connections. By removing mass load limits or greatly increasing them, most of the incentive to remove these excessive stormwater flows would not exist.

The Department is proposing to offset this in part by requiring a mandatory inflow reduction plan in exchange for the much higher winter limits (see further discussion below).

3. Infiltration and inflow reduction should not be linked with mass limits. If any facility has a problem with these, they should be addressed individually. Infiltration and inflow reduction plans across the state and country have been notoriously ineffective, and should be approached with caution.

Department response: As described above, one of the consequences of mass load limits as currently calculated is to encourage and require that extraneous flows in the sewer system (from groundwater and stormwater) be minimized. The proposed higher limits remove this incentive. To partially offset this, the Department is proposing an inflow reduction program. [Inflow refers to stormwater that directly flows into a sewer system through connections with roof drains, foundation drains, surface water, holes in manhole covers, parking lot drains, and street catch basins. Infiltration refers generally to groundwater that enters sewer systems through cracks, breaks, imperfect sealing of sewer pipes, crushed pipes, and other defects.]

It is true that infiltration reduction efforts have generally had very limited success. This is because, the system repairs often do not last very long, and because, as the groundwater rises past the level of sealed defects, it finds other (previously not detected) defects in the sewer system. However, permanently removing direct connections of inflow have proven to be effective, permanent, and relatively low-cost. It should be noted that all municipalities receiving an EPA Construction Grant (which are most facilities in Oregon) are required to adopt sewer ordinances prohibiting any new inflow connections, as a condition of grant award.

In theory, separate sanitary sewer systems should have no storm drains attached. However, many municipalities do not have separate storm sewer systems or drainage systems in all parts of their service area, and may have some scattered storm drains attached to their sanitary sewers. Disconnection of storm drains can be expensive to

complete, when there is no storm sewer system or drainage nearby. The Department intends to deal with such difficulties on a case-by-case basis with municipalities, and will not require removal of catch basins where the cost is prohibitive. [If there are widespread connections of storm drains, then the system is considered a combined sewer system, and is regulated under the federal combined sewer program. Oregon has only a handful of combined sewer systems left.]

For those municipalities having many inflow sources, removing them can have a significant impact on "peak" flows to treatment plants during storm events. It is not unusual to see a 20% reduction in peak flows from inflow removal, in systems with many inflow sources. Flows are directly related to mass loads discharged - if there is a 20% increase in flows, then the mass loads discharged will increase at least 20%, and probably more since the treatment efficiency deteriorates at high flows. Very high peak flows can result in the washout of solids in the treatment process, which both adversely affects the ability to disinfect the effluent, and can reduce the treatment efficiency for several days subsequent to the washout. It is the bacteria and other organisms in the solids that are the secondary treatment portion of the facility, and when they are washed out there are not enough organisms to effectively metabolize the sewage. This causes reduced treatment efficiency until the solids can be built up again. It should also be noted that fecal coliform testing is required relatively infrequently, and may well not pick up very high fecal coliform levels during "washouts" from high peak flows.

It is true that peak flow events to the treatment plant often coincide with high flows in the receiving stream, which reduces the impact of the much higher solids discharged. However, the Department believes that inflow control is a minimum reasonable expectation in terms of proper sewer maintenance. Inflow sources should not be connected to sanitary sewer systems. It is consistent with requiring the "highest and best practicable treatment".

4. Mass load limits are too expensive to comply with, and expose municipalities to very high risk through third party lawsuits. This applies both for the existing mass load limits, and for the proposed mass limits.

Department response: The Department does not agree that mass limits as currently calculated are either high cost, or high risk, with a few exceptions for systems with very high winter flows. The proposed rules should eliminate any chance for mass limit violations, except for freak flow conditions or negligence or upset conditions.

To get a feel for the risk and cost associated with mass limits, the Department investigated two areas. To determine the level of risk, the Department reviewed for effluent violations the monthly monitoring reports submitted by the 36 major municipal dischargers over the last three full years. Compliance with the existing mass limits were evaluated, which are significantly more stringent in the winter than the proposed mass limits. It should also be noted that the period evaluated was a relatively dry period, and may underestimate the number of mass limit violations that normally occur high flows. Key findings:

- Very few violations of any effluent limits occurred - only 0.60% of total possible effluent violations were recorded (333 actual violations of total 55,728 possible violations).

- Although there was a greater "chance" for mass limits violations since mass limits include daily limits, the frequency of actual mass limit violations was less than for concentration-type limits. [Mass limits were 63% of the potential violations, but only 34.5% of the actual violations recorded.]

- Most mass limit violations (53%) occur when other types of effluent violations are being violated, such as concentration limits or fecal coliform limits or both. These major events occurred when the plant was being overloaded (beyond its wasteload design), or when the plant was undergoing a major process upset, or when very high flows to the treatment plant caused "blowouts".

Since the "single operational event" clause in the new general conditions makes multiple parameter violations on a single day count as just one violation, this key finding means that 53% of the mass limit violations that occurred would not expose the municipality to any additional liability.

- Where only one type of effluent limit was violated, concentration limits were much more likely to be violated (39% of single violations) than mass limits (26% of single violations). Fecal coliform violations (23% of single violations) were about the same frequency as mass limit violations. The significance of this key finding is that mass limits are not significantly more stringent than other types of effluent limits, and do not subject the municipality to unreasonable risk. Concentration limits are much more stringent than mass limits, and fecal coliform bacteria limits are about equally stringent to mass limits.

- Not very many mass limit violations occur. However, when mass limit violations do occur (when only one type of effluent limit is being violated), they are much more frequent in the winter. The new proposed higher winter limits and suspension of daily limits during high flows should eliminate most mass limit violations in the winter.

To get a feel for whether mass limits can cause much higher plant/sewer system construction costs, the Department reviewed all major plant upgrades that have over the last four years, receiving funding through the Construction Grants or State Revolving Fund load program. Plant upgrades and expansions are typically triggered by effluent violations, or problems caused by the discharge in the receiving stream. Of the 20 plant expansions or upgrades, 0 were caused by mass load limit violations alone. Seventeen were caused by concentration and mass load limit violations, and sometimes by violations of additional effluent limits such as fecal coliform. Zero of the expansions/upgrades were caused by concentration limit violations, either. The remaining three plant upgrades were caused by receiving stream or raw sewage bypassing concerns. Conclusion: when a treatment plant is beyond its design capacity, or has a major design flaw, the treatment plant violates many effluent limits, not just mass limits or fecal coliform limits or concentration limits. Mass limits do not trigger plant expansions or upgrades.



Some municipalities have argued that compliance with the existing mass limits could cost hundreds of millions of dollars. Apparently this is based on achieving compliance under all possible flow conditions, to prevent one or two violations in a year. It is not credible to the Department that a municipality would spend millions or tens of millions to prevent a once per year violation (maximum of \$25,000 penalty), when neither the Department nor EPA issues civil penalties for such infrequent violations, and when the Department would not require such expensive improvements. It should be noted that similar arguments regarding the cost of complying with concentration limits (more frequently violated) and fecal coliform limit violations (equally frequently violated) have not been made, nor have we seen a movement on the part of municipalities to upgrade facilities to minimize these few violations of concentration and fecal coliform bacteria effluent limits.

Although the Department believes the cost impact may be exaggerated by some municipalities, the Department agrees that strict adherence to the mass limits as currently calculated could result in higher construction costs when an upgrade does occur, for some facilities where winter flows are high. The higher costs could result from larger secondary clarifiers, or additional sewer system rehabilitation to reduce flows, or more commonly addition of a filter for winter use only. The Department addressed this over the last two years by allowing higher mass limits during peak flows, on a case-by-case basis, as new or expanded facilities have been proposed. The Department believes that in this manner, no additional cost for meeting the proposed mass limits will be required either for existing or new facilities.

5. The exact manner of calculating mass load limits should be specified for new facilities, as it is specified for existing facilities. Or alternatively, mass limits for new facilities should be calculated the same as for existing facilities.

Department response: Using the same formula for mass limits for new facilities as for existing facilities is not appropriate. The Department believes that the proposed mass limits for existing facilities are probably much higher than needed for most treatment facilities to

insure continuous compliance. These higher numbers were set as part of a permit appeal negotiation and settlement process, and because the Department does not have the staff to individually analyze each of the existing 250 domestic wastewater dischargers in Oregon. When new facilities are proposed, however, an extensive engineering evaluation already occurs as part of the mandatory engineering plan review and approval process. Determining accurate mass load limits is a relatively easy addition to the review process. By looking at each facility individually, mass limits that are both consistently achievable and yet stringent enough to require good operation most of the time can be determined.

Regarding including in this rule a specific formula for calculating mass limits for new facilities, the Department has not settled on one approach. Over the past two years, several slightly different approaches have been used. Basically, the Department's approach has been to fit mass limits that are consistently achievable but no higher than necessary, to the proposed treatment facility. This contrasts with past practice of setting mass limit to be met, and requiring that the treatment facility be designed around these predetermined mass limits.

The Department has convened a technical advisory committee to provide us with a recommended consistent approach for new facilities, however results are not expected for another six to twelve months. The Department would prefer to assign mass limits on a case-by-case basis in the interim, in consultation with the individual municipality and its consulting engineer. When the advisory committee concludes its work, the Department intends to proceed to rule making to specify how mass limits are to be set for new facilities.

6. One year to implement the inflow reduction plan may not be long enough for some municipalities. It may take up to two years to get the inflow plan through the budget process, hire staff, and so on.

Department response: The proposed rule requires that an inflow reduction plan be submitted within six months of permit issuance, and that the program get started within one year of the Department approving the plan. There are no deadlines in the rule for completing the inflow reduction plan, which will be negotiated individually with

each municipality. Unavoidable delays in administrative matters can be dealt with in the proposed plan. Considering that permit renewals typically take six months or more, we are talking about a minimum of a two year lead time for a municipality to prepare for inflow reduction. Given that all municipalities are now required to have an infiltration and inflow reduction plan in place, further delay does not seem reasonable. However, there is flexibility in the rule for extended inflow reduction programs if warranted.

7. Combined sewer systems should not be required to meet the same requirements for inflow removal, since by definition combined sewer systems do not have storm sewers or drainage systems available for the street drains and other inflow sources. Flexibility should be shown in allowing cost effective alternatives to inflow removal, such as in-line storage for storm flows and later treatment. Also, the requirement for an inflow reduction plan is redundant and could be contradictory to the combined sewer overflow control measures required of all municipalities with combined sewer systems.

Department response: We agree in part. The Department has required most cities in Oregon with combined sewer systems to separate them. We continue to believe that sewer separation is the best alternative in terms of reducing flows to the treatment facility, and thereby reducing the discharge of pollutants (flow is directly related to mass loads discharged). However, we recognize that for some portions of the few remaining combined sewer systems, complete sewer separation may be prohibitively expensive. For those cities, the Department will accept cost effective alternatives that are also capable of achieving permit limits and not violating stream water quality standards. We also agree that this condition is redundant for those municipalities with combined sewer systems, and have made revisions to the proposed rule to exempt those municipalities.

8. What does "highest and best practicable treatment" mean, as it is used in the proposed rule?

Department response: This term is used but not defined in other water quality regulations. However, the Department has prepared a guidance document on how this term is interpreted by the Department. In general, the Department

believes that existing plant equipment should be run at its optimum so as to minimize the discharge of pollutants - in other words, if you've got it, use it. The word "practicable" does include an economic element, and also implies looking at trade-offs. For example, phosphorous removal is not needed in the winter, as phosphorous is a summer only concern, and yet phosphorous removal efforts can result in larger volumes of sludge to be beneficially used. It would not be "practicable" to run phosphorous removal in the winter. In another example, if a treatment process or unit is expensive to run but produces no improvement in effluent quality or an insignificant improvement in effluent quality, then it is not "practicable" to operate that process or unit.

9. What does the term "hydraulic capacity" mean? Shouldn't this instead be "maximum hydraulic flows at which secondary treatment levels can be achieved"?

Department response: The term means the maximum instantaneous flow that can get through the pipes and pumps in the secondary portion of the treatment plant, without flows backing up into the primary portion of the plant. Flows above that would have to bypass the secondary treatment portion of the plant (i.e., split flow). The other portion of the rule allows the alternate use of two times the design average dry weather flow. Most, if not all treatment plants should be able to meet the much higher daily mass limits proposed in this rule, using these trigger flows. However, if there are any facilities not able to meet the daily limits because of their treatment plant design, there is a procedure for gaining an exception from the Commission.

10. What does the term design average wet weather flow mean, and will the Department consider alternate flows if the original determination of this number was in error?

Department response: Typically, municipalities will expand/upgrade their entire treatment facilities to last for a specific period of time (20 years, ten years or other) and will design the plant to achieve permit limits both summer and winter up until that year when the facility reaches capacity. The term "design average wet weather flow" means the projected average daily flow for the period of November 1 through April 30, in an average weather year, in the year when the treatment plant is no

Memo to: Environmental Quality Commission  
July 8, 1992  
Page 14

longer able to consistently comply with the discharge limits. Some municipalities may upgrade their treatment plant piecemeal, and the treatment plant may violate permit limits (reach capacity) in different years for winter flows and summer flows. For those treatment plants, the design average wet weather flow would be the projected flow in the year when winter limits could no longer be expected to be consistently achieved.

The Department recognizes that many design flow projections made in the past assumed unrealistic flow reductions through infiltration and inflow reduction. We are willing to consider alternate design average wet weather flow projections, provided they are based on sound engineering evaluations.

## ATTACHMENT I

### SUPPLEMENTAL BACKGROUND INFORMATION

#### Table of Contents

- Background Information
  - Water quality versus technology based effluent limits
  - How mass limits are currently calculated
  - What can cause mass limit violations
  - Mass load limits are harder to achieve in winter
  - Risk/cost associated with current mass limits
- Major Features of Proposed Rule
- What the New Mass Limits Will Look Like
- Expected Impact of New Mass Limits

#### BACKGROUND INFORMATION

Water quality based versus technology based effluent limits - The Department issues National Pollutant Discharge Elimination System (NPDES) permits to all municipal and privately owned domestic wastewater treatment plants that discharge to surface waters. These joint federal/state permits include numerous effluent limits for different pollutants. Some effluent limits are strictly water quality based - that is, they are set specifically to prevent the discharge from causing an instream water quality standard violation. Examples of water quality based limits would be a maximum chlorine concentration limit, to prevent exceeding the instream numerical standard for this toxic substance, and phosphorous mass load limits for the Unified Sewerage Agency discharging to the Tualatin River (a water quality limited stream). Other effluent limits are technology based. Technology based limits express a minimum expectation of what a particular type of treatment facility should be able to produce, given good operation and maintenance, regardless of the condition of the receiving stream. Technology based limits are water quality related in that they minimize the discharge of pollutants to surface waters, but they are not set specifically to prevent an instream water quality standard violation. Examples of technology based limits would be federal secondary treatment requirements of 30 mg/l BOD and TSS on a monthly average, and most mass limits for BOD and TSS assigned to domestic wastewater treatment plants.

How mass loads are currently calculated - There is no documentation as to how the mass load formulas were developed, and none of the staff responsible for this determination is still working for the Department. It is assumed that the formulas were determined by senior engineering staff, based on their experience as to what a well designed sewage treatment plant, and a well maintained sewer system, ought to be able to attain on a consistent basis. Mass loads have been calculated based on these set formulas:

monthly mass limit = concentration limit X design average dry weather flow X 8.34 #/gallon

weekly mass limit = monthly mass limit X 1.5

daily maximum limit = monthly mass limit X 2

Mass load limits are included in permits issued prior to startup of each new or expanded treatment plant, and typically have been included without change in subsequent permits issued to the facility. Mass loads are usually higher for the winter discharge period (November 1 through April 30), than for the summer discharge period (May 1 through October 31), based on the higher concentration limits for winter discharges over summer discharges. An example of typical effluent limits for one sewage treatment facility is shown below:

TABLE 1

Example Effluent Limits, Existing Mass Limits

(a) November 1 - April 30:

Parameter	Monthly Average		Weekly Average		Daily Maximum	
	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
BOD	30	250	45	375	-	500
TSS	30	250	45	375	-	500

(b) May 1 - October 31:

Parameter	Monthly Average		Weekly Average		Daily Maximum	
	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
BOD	10	83	15	125	-	167
TSS	10	83	15	125	-	167

The Department has made some exceptions in calculating mass loads for new facilities in the last two years.

What can cause mass limit violations - Mass limits are not now violated very often, but the most common causes of violations are:

- Plants that are beyond their design organic treatment capacity, and need to be upgraded or expanded. These plants will typically violate mass limits, concentration limits, and sometimes fecal coliform limits also (the high solids prevent good disinfection of the effluent).
- Plants that are experiencing a major process upset, which could be caused by operator error, power outage, failure to remove waste sludge, poisoning of the biomass by an unknown industrial discharge, or other cause.
- Plants that have very high flows due to infiltration (groundwater entering through leaks) and inflow (stormwater entering sewer system directly through street catch basins, connections of roof drains, and foundation or sump drains).

Mass load limits are harder to achieve in the winter - Sewage treatment plants do not treat as well in the winter, due to colder temperatures (slows down the bacteria which digest the sewage) and the generally higher flows (from leaks in the sewer system during rains or when groundwater levels rise in the winter). For these reasons, Oregon has both higher concentration limits and higher mass effluent limits for winter discharges for most treatment plants.

For some treatment plants having very high flows during the winter, either due to combined sewers, sewers in exceptionally poor repair, or where groundwater levels are very high, it is not possible to consistently meet the winter mass limits as routinely calculated by the Department. The Department has in the past given exceptions on a case-by-case basis to some municipalities having very high flows. These exceptions varied from suspending mass limits when flows exceeded a certain level, to setting a second set of higher limits when flows exceeded a certain level.

In addition, the Department has exercised some enforcement discretion when mass limits are infrequently exceeded during extreme flow conditions. For example, a municipality violating mass limits once in a year during a week of very heavy rains would probably receive nothing beyond a Notice of



Noncompliance from the Department. No further action would be taken or required unless the violations were repeated or appeared to be the result of operator error or negligence.

Risk/cost associated with existing mass limits - Many municipalities have stated that mass limits, as currently calculated, subject municipalities to great risk and would be extremely expensive to fully comply with. The Department does not agree that mass limits as currently calculated are overly stringent, or high risk, with a few exceptions for systems with very high winter flows. The proposed rules should eliminate any chance for mass limit violations, except for freak flow conditions or negligence or upset conditions.

To get a feel for the risk associated with mass limits, the Department reviewed for effluent violations the monthly monitoring reports submitted by the 36 major municipal dischargers over the last three full years. Compliance with the existing mass limits were evaluated, which are significantly more stringent in the winter than the proposed mass limits. It should also be noted that the period evaluated was a relatively dry period, and may underestimate the number of mass limit violations that normally occur high flows. Key findings:

- Very few violations of any effluent limits occurred - only 0.60% of total possible effluent violations were recorded (333 actual violations of total 55,728 possible violations).

- Although there was a greater "chance" for mass limits violations since mass limits include daily limits, the frequency of actual mass limit violations was less than for concentration-type limits. [Mass limits were 63% of the potential violations, but only 34.5% of the actual violations recorded.]

- Most mass limit violations (53%) occur when other types of effluent violations are being violated, such as concentration limits or fecal coliform limits or both. These major events occurred when the plant was being overloaded (beyond its wasteload design), or when the plant was undergoing a major process upset, or when very high flows to the treatment plant caused "blowouts". Since the "single operational event" clause in the new general conditions makes multiple parameter violations on a single day count as just one violation, this key finding means that 53% of the mass limit violations that occurred would not expose the municipality to any additional liability.

- Where only one type of effluent limit was violated, concentration limits were much more likely to be violated (39% of single violations) than mass limits (26% of single violations). Fecal coliform violations (23% of single violations) were about the same frequency as mass limit

violations. The significance of this key finding is that mass limits are not significantly more stringent than other types of effluent limits, and do not subject the municipality to unreasonable risk. Concentration limits are much more stringent than mass limits, and fecal coliform bacteria limits are about equally stringent to mass limits.

- Not very many mass limit violations occur. However, when mass limit violations do occur (when only one type of effluent limit is being violated), they are much more frequent in the winter. The new proposed higher winter limits and suspension of daily limits during high flows should eliminate most mass limit violations in the winter.

To get a feel for whether mass limits can cause much higher plant/sewer system construction costs, the Department reviewed all major plant upgrades within the last four years that received funding through the Construction Grants or State Revolving Fund load program. Plant upgrades and expansions are typically triggered by effluent violations, or problems caused by the discharge in the receiving stream. Of the 20 plant expansions or upgrades, 0 were caused by mass load limit violations alone. Seventeen were caused by concentration and mass load limit violations, and sometimes by violations of additional effluent limits such as fecal coliform. Zero of the expansions/upgrades were caused by concentration limit violations, either. The remaining three plant upgrades were caused by receiving stream or raw sewage bypassing concerns. Conclusion: when a treatment plant is beyond its design capacity, or has a major design flaw, the treatment plant violates many effluent limits, not just mass limits or fecal coliform limits or concentration limits. Mass limits do not trigger plant expansions or upgrades.

Some municipalities have argued that compliance with the existing mass limits could cost hundreds of millions of dollars. Apparently this is based on achieving compliance under all possible flow conditions, to prevent one or two violations in a year. It is not credible to the Department that a municipality would spend millions or tens of millions to prevent a once per year violation (maximum of \$25,000 penalty), when neither the Department nor EPA issues civil penalties for such infrequent violations, and when the Department would not require such expensive improvements. It should be noted that similar arguments regarding the cost of complying with concentration limits (more frequently violated) and fecal coliform limit violations (equally frequently violated) have not been made, nor have we seen a movement on the part of municipalities to upgrade facilities to minimize these few violations of concentration and fecal coliform bacteria effluent limits.

Although the Department believes the cost impact may be overstated by some municipalities, the Department agrees that strict adherence to the mass limits as currently calculated could result in higher construction costs when an upgrade does occur, for some facilities where winter flows are high. The higher costs could result from larger secondary clarifiers, or additional sewer system rehabilitation to reduce flows, or more commonly addition of a filter for winter use only. The Department addressed this over the last two years by allowing higher mass limits during peak flows, on a case-by-case basis, as new or expanded facilities have been proposed. The Department believes that in this manner, no additional cost for meeting the proposed mass limits will be required either for existing or new facilities.

#### MAJOR FEATURES OF PROPOSED RULE

The text of the proposed rule is included in Attachment A. For existing facilities, the following provisions apply:

- Summer mass limits the same - Summer mass load limits (May 1 through October 31) are calculated the same as currently calculated.
- Winter mass limits higher - Winter limits (November 1 through April 30) are calculated using the average design wet weather flow, not the average design dry weather flow as is currently done. This will result in a significant increase of permitted mass loads for most treatment facilities.
- Daily limits suspended under some circumstances - Daily limits are suspended on days when flows to the treatment plant exceed twice the average design dry weather flow.
- Mass load increases exempt from "anti-degradation" review process - The mass load increases granted under this rule will not be subject to the review and approval process for mass load increases included in OAR 340-41-026(3). The rule cited, commonly referred to as the "anti-degradation" rule, requires that the Commission review and approve all waste load increases for major dischargers (generally treatment facilities serving a population equivalent of 10,000 or more). The Department must review and approve all waste load increases for minor dischargers. The waste load increase approvals can only be granted if certain specific findings are made. The Department is proposing to exempt these across-the-board increases from this

detailed review because of the expected lack of water quality impact (see further discussion in next section), and because of the work load implications for the Department (see section on Program Considerations for further discussion).

- Inflow control program required - Higher winter flows to sewage treatment facilities are the result of extraneous flows of groundwater and stormwater entering the sewer system through cracks and imperfections in the sewers, or through direct connections. The existing mass limits are effectively the only effluent limit that encourages municipalities to reduce the extraneous flows in the sewer system. By raising the winter limits as proposed in this rule, the Department is removing this incentive to reduce the flows and therefore reduce the mass discharges. The Department is proposing the inflow reduction program requirement to insure that some minimum level of extraneous flow reduction is carried out.

- Identification of sewer system overflows required - Identification of overflow points and verification that no discharges of raw sewage are occurring is required. This is part of the total system flow identification information needed to establish new mass limits, and to assure that all system flows are accounted for. It is also of interest to the Department in identifying those systems with discharging overflow points, so that the Department can work with the community in eliminating these illegal discharges.

- Some communities are exempt - Certain communities are listed as exempt from the formulas for mass loads for existing facilities. These communities received mass load assignments in recent years, that did not follow the historic manner of calculating mass loads.

- Mass limits for future facilities will be on a case-by-case basis - A provision is included which states that the Department will assign mass limits for future facilities on a case-by-case basis, taking into consideration the proposed facility design capability and projected flows.

- More stringent mass limits may be assigned if required by receiving stream - A section allows the Department to assign more stringent mass limits if required to prevent or eliminate violations of instream water quality standards.

- Existing facilities may elect to retain mass limits calculated using design average dry weather flow. Most municipalities can comply with the existing mass limits, and this section allows them to avoid the other requirements of this rule such as inflow reduction.

- Exceptions may be granted by Commission - For existing facilities, exceptions may be granted by the Commission provided the permit holder can demonstrate that a higher limit is needed, and that there are no practicable alternatives to the increased wasteload, and providing that no unacceptable water quality impacts will result.

#### WHAT THE NEW MASS LOAD LIMITS WILL LOOK LIKE

The mass load limits for the summer will remain unchanged for existing facilities. The existing winter mass load limits are calculated using the design average dry weather flow. The proposed rule will require calculation of the winter limits based on the design average wet weather flow, which is the projected average flow for November 1 through April 30 of the year that the treatment plant reaches capacity. The winter mass limits will be considerably higher, but the amount of increase will depend on the individual system's projected design average wet weather flows.

The design average wet weather flow is generally not yet known for most facilities, and will have to be determined prior to new mass limits being assigned. Although the amount of increased flows will be calculated based on the average wet weather flow when the treatment plant has reached design capacity (typically year 20 after construction), the current average wet weather flow can give an estimate of the amount of increase expected. That is, the ratio of average dry weather flow to average wet weather flow may not vary much over the design life of most treatment plants. By looking at the average wet weather flow today, we can get some idea of the magnitude of mass load increases.

The Department reviewed 35 randomly chosen domestic wastewater facilities for the period of November, 1986 to October, 1991, and compiled actual average dry weather versus average wet weather flows for each on a yearly basis, and over a five year average. These five years were somewhat lower than normal rainfall, so actual mass load increases based on design average wet weather will be higher.

Using the single highest year average wet weather flow for illustrative purposes, the winter mass loads for the 35 facilities will increase from 0% for Pendleton (dry climate),

to 300+% for Astoria, Drain, and Rainier. USA-Rock Creek will increase by 243%. As expected, those treatment facilities located in higher precipitation areas of the state will have much greater mass load increases. The summary of 35 municipalities is shown in Table 2. These numbers are for illustration only, and actual mass loads for winter will probably be higher and will be determined based on an engineering evaluation of the average wet weather flows at design. In addition, the effect of the new mass limits will be even greater than indicated, since the daily mass limit will be suspended for much of the winter discharge period. Table 3 includes the approximate new limits for an example large treatment plant, and Table 4 illustrates what a typical smaller treatment plant might have as new limits.

TABLE 2

Effects of Using Design Average Wet Weather Flows  
on  
Mass Limits for 35 Example Municipalities

Facility	Design ADWF <sup>1/</sup> (MGD)	Winter Monthly Mass Limits BOD & TSS (lb/day)	
		Existing <sup>3/</sup>	Using AWWF <sup>2/</sup>
USA Rock Cr.	20	2502	6075
Pendleton	5.5	1376	1324
Ashland	3.1	776	849
Oak Lodge	4.0	1000	1561
Astoria	4.0	1050	3443
So. Suburban SD	2.0	1417	1455
Myrtle Creek	0.96	160	333
Stayton	1.35	51	229
Adair Village	0.2	50	425
Bandon	0.45	113	175
Butte Falls	0.07	18	24
Clatskanie	0.5	125	253
Drain	0.3	75	226
Garibaldi	0.5	125	265
Hubbard	0.34	85	91
Lafayette	0.3	75	139
Maupin	0.1	25	24
Meadow Lake	0.04	10	12
Mosier	0.085	21	23
Netarts	0.4	100	206
Oakridge	0.41	102	236
Rainier	0.5	125	375
Rogue River	0.3	75	85
Shady Cove	0.45	112.5	208
Toledo	0.73	122	402
Waldport	0.3	75	145
Westfir	0.03	7.5	17
Amity	0.154	64	69
Cannon Beach	0.68	346	433
Dufur	0.043	43	48
Eagle Point	0.375	156	173
Independence	0.6	834	763
Monroe	0.09	75	105
Prineville	0.88	623	647
Tangent	0.11	83	129

<sup>1/</sup> Average dry weather flow (May 1 through October 31)

<sup>2/</sup> Average wet weather flow (November 1 through April 30)

<sup>3/</sup> Using average dry weather flow to calculate mass limits.

TABLE 3

CURRENT AND ESTIMATED PROJECTED MASS LIMITS

FOR

EXAMPLE LARGE FACILITY (Oak Lodge Sanitary District)

EXISTING EFFLUENT LIMITS

(a) November 1 - April 30:

Parameter	Monthly Average		Weekly Average		Daily Maximum	
	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
BOD	30	1000	45	1500	-	2000
TSS	30	1000	45	1500	-	2000

(b) May 1 - October 31:

Parameter	Monthly Average		Weekly Average		Daily Maximum	
	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
BOD	20	667	30	1000	-	1334
TSS	20	667	30	1000	-	1334

ESTIMATED PROPOSED EFFLUENT LIMITS

(a) November 1 - April 30:

Parameter	Monthly Average		Weekly Average		Daily Maximum*	
	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
BOD	30	1556	45	2334	-	3112
TSS	30	1556	45	2334	-	3112

\* Daily limits do not apply when flows exceed 8.0 MGD [twice adwf]

May 1 - October 31: Same as existing effluent limits.



**TABLE 4**  
**CURRENT AND ESTIMATED PROJECTED MASS LIMITS**  
**FOR**  
**EXAMPLE SMALL FACILITY (Clatskanie)**

**EXISTING EFFLUENT LIMITS**

(a) November 1 - April 30:

Parameter	Monthly Average		Weekly Average		Daily Maximum	
	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
BOD	30	125	45	188	-	250
TSS	30	125	45	188	-	250

(b) May 1 - October 31:

Parameter	Monthly Average		Weekly Average		Daily Maximum	
	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
BOD	20	83	30	125	-	167
TSS	20	83	30	125	-	167

**ESTIMATED PROPOSED EFFLUENT LIMITS**

(a) November 1 - April 30:

Parameter	Monthly Average		Weekly Average		Daily Maximum*	
	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
BOD	30	252	45	378	-	504
TSS	30	252	45	378	-	504

\* Daily limits do not apply when flows exceed 1.0 MGD [twice adwf]

May 1 - October 31: Same as existing effluent limits.

## EXPECTED IMPACT OF DISCHARGES, IMPACT ON RECEIVING STREAMS

Higher limits will probably result in somewhat higher discharges - The increased limits will not automatically mean that discharges will increase up to the new higher limits. Doubling of winter mass limits, for example, will probably not result in doubling of the actual mass loads discharged over what would otherwise have occurred. Some increase in mass loads discharged is expected after mass load limits are increased, however.

The Department evaluated effluent limit violations for major municipal facilities, and found that mass limits are currently the most commonly violated effluent limit in the winter. By raising the mass limits in the winter, there is a reduced chance of violation and therefore some changes in operation that would increase mass loads discharged could occur.

Examples of changes in operation or maintenance that could be expected to increase discharges include: changes in operational mode to a more economical one, to reduce power costs or chemical feed costs; increase in septic tank pumpings received for processing; delays in completing equipment repairs (not paying for express shipments, or not authorizing overtime); reducing sludge wasting (reduces cost of sludge treatment but increases discharges); and other operational decisions. While domestic wastewater treatment plants are generally operated at their highest efficiency, and operators take pride in producing the very best effluent possible, costs are a consideration. Where extra staff or more money is required to produce a better quality effluent, many municipalities consider first whether the additional effort is required to meet permit limits. If not, then there is much reduced incentive to make the added effort to produce better quality effluent.

In addition, flows of extraneous groundwater and stormwater into sewer system defects are currently the principal cause of high winter mass discharges. By increasing the mass limits, the incentive is reduced to maintain and regulate the levels of these extraneous flows into the sewer system and treatment plant. Some higher discharges could result from a decreased level of activity in infiltration and inflow control.

Impact on receiving streams - The most common pollutants of concern from sewage treatment plants are BOD (which can cause dissolved oxygen violations) and nutrients (which can cause algal blooms with the associated pH, dissolved oxygen, and chlorophyll-a violations). The Department does not believe that the increased winter discharges will cause any streams to experience instream water quality violations for these common pollutants for the following reasons:

- Flows are much higher in Western Oregon streams in the winter, than in the summer. Two examples - the Willamette River at Salem averages 3.6 times more flow in the winter months than in the summer months; the Siletz River averages 6.0 times more flow in the winter than in the summer. Additional flows provide dilution for discharges and reduce the chances for instream water quality violations. If no instream standard violations are occurring in the summer, it is unlikely that winter violations would occur even with higher discharges.

- Water in the receiving stream is much colder in the winter, and colder water can hold more dissolved oxygen (9.0 mg/l dissolved oxygen if water temperature is 68 degrees, 11.3 mg/l if water temperature is 50 degrees). This means that there is more oxygen available for organisms using the BOD in the effluent for a food source, and therefore there is less chance of dissolved oxygen violations. In addition, the lower temperatures slow down the metabolic process in the effluent BOD, which increases the distance in the receiving stream over which the oxygen demand is exerted.

- Sunlight in the winter is weak enough that algal growth is not a concern, and related instream water quality violations do not occur.

Increased TSS discharges may be of concern, as they could result in violations of other effluent limits. Large concentrations of solids can seriously interfere with disinfection, since the chlorine cannot penetrate into the center of the particles to effect a good kill of bacteria and viruses. Sludge solids typically accumulate 50 to 75% of the heavy metals entering the sewage treatment facility. For those plants receiving significant industrial wastes, higher TSS discharges will inevitably carry these metals with them. The Department will continue to require monitoring and compliance with bacteria standards and metals.

Impact on the number of violations - Other than plants in need of upgrade and expansion, there are not now very many mass limit violations. The remaining mass limit violations are generally as a result of high flows in the winter. The substantial increase in mass loads is expected to eliminate most, if not all of the remaining winter mass limit violations.

Impact on number of "premature" plant upgrades required - The Department reviewed all 20 major plant expansions in Oregon over the last five years, where EPA or State funding was used. None of them were triggered by mass limit violations alone. Based on this information, the Department does not expect that this rule change will affect the useful life of treatment plants.

LANE  
POWELL  
SPEARS  
LUBERSKY



Richard H. Williams  
(503) 778-2160

July 2, 1992

Larry Knudsen  
Assistant Attorney General  
Department of Justice  
100 Justice Building  
Salem, Oregon 97310-0001

*Law Offices*

520 S.W.  
Yamhill Street  
Suite 800  
Portland, OR  
97204-1383

(503) 226-6151

*Telex:*  
269029-SPRS-UR  
*Facsimile:*  
(503) 224-0388

*A Partnership  
Including  
Professional  
Corporations*

Re: In the Matter of NPDES Permit No. 100715 Issued to the City of St. Helens on November 14, 1990, and No. 100716 Issued to James River II, Inc. on November 14, 1990  
Our File No. 4185-286

Dear Mr. Knudsen:

Thank you for the notice dated June 24, 1992, advising the parties that the Commission may consider the petitions for reconsideration or rehearing at its meeting on July 23, 1992.

The notice states that the Commission may decide to allow oral argument on the petitions. If the Commission so decides, James River wishes to have the manager of the Wauna mill, Robert Morgan, make a statement in support of its petition.

James River requests that the parties be informed in advance of the July 23 meeting, and preferably as soon as possible, whether the Commission will permit oral statements and, if so, the length of the permitted statements.

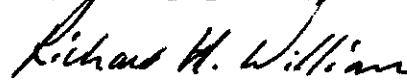
I understand from our conversation that decisions on procedures will be made by the Commission as a whole, and that it probably is not feasible for the Commission to make those decisions in advance of the meeting. In these circumstances, it would assist James River, and perhaps the other parties, to know whether recommendations about procedures will be made to the Commission and, if so, what the recommendations will be.

Anchorage, AK  
Los Angeles, CA  
Mount Vernon, WA  
Olympia, WA  
Portland, OR  
Seattle, WA  
London, England  
Tokyo, Japan

Larry Knudsen  
July 2, 1992  
Page 2

Thank you for your attention to this request.

Very truly yours,



Richard H. Williams

cc: William W. Wessinger, Chair,  
Environmental Quality Commission  
Fred Hansen, Director,  
Department of Environmental Quality  
Service List

J:\CG1\RH\10072RH\LTR



DEPARTMENT OF JUSTICE

PORTLAND OFFICE  
1515 SW 5th Avenue  
Suite 410  
Portland, Oregon 97201  
Telephone: (503) 229-5725  
FAX: (503) 229-5120

MEMORANDUM

State of Oregon  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
**RECEIVED**  
JUL 20 1992

OFFICE OF THE DIRECTOR

DATE: July 17, 1992

TO: Environmental Quality Commission

FROM: Larry Knudsen *LK*  
Assistant Attorney General

SUBJECT: Petitions for Reconsideration of Pulp Mill Permit Appeals

This memorandum provides examples of motions that the Commission may wish to consider if it decides to act on the petitions for reconsideration filed by the James River and Boise Cascade (hereinafter the mills). (The City of St. Helens also filed a petition, but it was not timely.) The sample motions address possible issues for reconsideration, reopening of the record, and potential role of the hearings officer. Please note that the Commission is not required to take any action on the petitions and, if it does decide to act, it is not limited to these options.

Background

A review of the Commission's previous decision regarding organochlorines may be helpful. The Commission established an effluent discharge limit of 1.5 kg/ADMT for AOX. This limit was established pursuant to the technology-based (as opposed to water-quality based) limits provisions in the Clean Water Act. These technology-based limits are intended to prevent the nation's waters from being further degraded by the discharge of pollutants. In other words, the limits are not based on a determination that the discharge will interfere with a designated use.

DEQ established the AOX limitation based upon the best available technology that is economically achievable (BAT) for the industry. Because neither EPA or state rules provide specific limitations for organochlorines, the determination was

Post-It™ brand fax transmittal memo 7671		# of pages	7
To	FRED HANSEN	From	L. KNUDSEN
Co.	DEQ	Co.	
Dept.		Phone #	229-5725

Environmental Quality Commission  
July 17, 1992  
Page Two

made on a case-by-case basis using best professional judgment (BPJ). In making this BAT determination, cost/benefit analysis is not required. Rather, the Department (and on review the Commission) considered whether the cost of the technology is reasonable in light of the overall goals of the Clean Water Act, i.e., progress towards the elimination of all discharges of pollutants into the nation's waters.

The Department and the Commission determined that oxygen delignification was BAT for purposes of the discharge of organochlorines from pulp mills. The Department and Commission further determined that AOX was the appropriate parameter for establishing limits and that a discharge of 1.5 kg/ADMT could be achieved using appropriate technology including oxygen delignification.

The mills are not required to comply with limitation until 1995. Further, the mills are not required to install oxygen delignification equipment to meet the limitation. The limitations can be met using other technology.

#### Scope of Reconsideration and Rehearing

1. No Action. If the Commission takes no action before August 10, 1992, the petitions will be denied by operation of law.

2. Deny Petitions. The Commission may decide to deny the petitions. It may do so by a summary order.

MOTION: Move to deny the James River and Boise Cascade petitions and direct legal counsel to prepare a summary order for signature by the Director.

3. Grant Petitions and Continue Hearing on Scope of Reconsideration. The Commission may decide that it wants to reconsider the case but that it is uncertain as to the scope of the issues to be reviewed or new evidence to be allowed. If this is the case, the Commission may grant the petitions at its July meeting and defer a decision on the scope of the reconsideration to a later meeting. If the Commission takes this approach, it should continue the hearing to a specific date.

Environmental Quality Commission  
July 17, 1992  
Page Three

MOTION: Move to grant the James River and Boise Cascade petitions, continue the hearing to the Commission's September meeting for the purpose of determining the scope of the reconsideration and rehearing and direct legal counsel to prepare an order for the Director's signature.

4. Grant Petitions to Reconsider Regulation of Organochlorines. It is not clear whether the federal Clean Water Act requires that organochlorines be regulated in the mills' permits. During the contested case proceedings, the parties and the Department disagreed on this point. The hearings officer concluded that under the somewhat unique facts of this case (i.e., EPA's pending consideration of organochlorine regulations), the Department legally can impose limitations but such limitations are not required. He also recommended that the Commission not impose limitations. The Commission accepted the hearings officer's legal conclusion but not his recommendation. Accordingly, it decided that organochlorines were a matter of regulatory concern and imposed a limitation on AOX discharges.

MOTION: Move to grant the James River and Boise Cascade petitions for the purpose of reconsidering whether to impose any limitation on the discharge of organochlorines and direct legal counsel to prepare an order for the Director's signature.

5. Grant Petitions and Reconsider AOX Parameter. The Commission upheld the Department's determination that AOX is the proper parameter for regulating organochlorines. It may reconsider this conclusion and the supporting findings. As a practical matter this decision would necessitate a rehearing of the case to allow evidence on alternative parameters and, if some other parameter is selected, the Commission would have to determine the appropriate limitation.

MOTION: Move to grant the James River and Boise Cascade petitions for the purpose of reconsidering the parameter to be used to regulate organochlorines and direct legal counsel to prepare an order for the Director's signature.

6. Grant Petitions and Reconsider Best Available Technology. The Commission also upheld the Department's determination that the best available technology that is economically achievable (BAT) for the industry includes oxygen delignification (in addition to chlorine dioxide substitution).



Environmental Quality Commission  
July 17, 1992  
Page Four

The Commission could reconsider this conclusion and the supporting findings (for example, the Commission might conclude, after hearing additional argument and evidence, that the cost of delignification is unreasonable). If the BAT determination is changed, the Commission also would need to reconsider the discharge limitation.

MOTION: Move to grant the James River and Boise Cascade petitions for the purpose of reconsidering whether oxygen delignification is BAT and direct legal counsel to prepare an order for the Director's signature.

7. Grant Petition and Reconsider Limitation. The Commission upheld the Department's determination that 1.5 kg/ADMT is the appropriate discharge limitation for an industry using BAT. Thus, this becomes the discharge limitation in the permits. The Commission could reconsider whether 1.5 kg/ADMT is the appropriate limitation for an industry using BAT. If oxygen delignification is BAT, however, the limitation must be based on discharges using that type of technology.

MOTION: Move to grant the James River and Boise Cascade petitions for the purpose of reconsidering the discharge limitation and direct legal counsel to prepare an on order for the Director's signature.

8. Rehearing of Evidence. Assuming that the Commission decides to grant reconsideration it may also choose to reopen the hearing record and allow the parties and the Department to present new evidence. The mills' petitions are based in part upon factual allegations that are not in the existing administrative record. If the Commission wishes to consider these alleged facts when it reconsiders any issue, a rehearing will be required. If the Commission allows new evidence to be presented, the parties must be given an opportunity to cross examine witnesses and to present rebuttal evidence. (The Commission is not required to allow the Department to present new evidence, cross examine witnesses or present rebuttal testimony, but it may do so.) The Commission may open the record for any new evidence relevant to the issues being reconsidered or it may allow only specified new evidence.

MOTION: Move to reopen the record to allow the parties and the Department to present new evidence relevant to any issue being reconsidered.

Environmental Quality Commission  
July 17, 1992  
Page Five

ALTERNATIVE MOTION: Move to reopen the record to allow the parties to present evidence relevant to the following matters: past discharges of organochlorines from the St. Helens and Wauna mills, information about expected future discharges from the St. Helens and Wauna mills, discharges and bleaching modifications at the Simpson pulp mill in Tacoma, Washington, and regulation of organochlorines by the State of Washington and EPA Region 10.

Procedural Options

1. Stay of Proceedings. The Commission may decide to reconsider and rehear some part of its decision, but also to stay the proceedings for a specified period of time to provide an opportunity to develop new information or to accommodate the development of regulatory approaches in neighboring jurisdictions. If the Commission decides to stay the proceedings it should be mindful of the mills' rights to timely judicial review.

MOTION: Move to stay proceedings on the reconsideration and rehearing until [specify a date].

2. Partial Stay of Proceedings. Alternatively, the Commission might want to proceed immediately to hear evidence about the status of mills' installation of chlorine dioxide substitution equipment and process changes. The Commission could use this information to decide whether it is appropriate to stay the proceedings on the merits for an additional period to allow for the measuring of actual discharges. The Commission might want information on actual discharges before reaching a decision on the merits.

MOTION: Move to stay the proceedings on merits of reconsideration until after the Commission has heard testimony and argument on the installation of chlorine dioxide substitution equipment and process changes.

3. Role of the Hearings Officer. If the Commission decides to reopen the record and hear new evidence, it may conduct the evidentiary hearing itself or it may remand the matter to the hearings officer. (Alternatively, a new hearings officer could be appointed.) The Commission could direct the hearings officer to prepare proposed new findings and conclusions if he determines that these are warranted by the new evidence.

Environmental Quality Commission  
July 17, 1992  
Page Six

MOTION: Move to remand the matter to the hearings officer to conduct the rehearing authorized by the Commission and direct the hearings officer to prepare a record on rehearing.

ALTERNATIVE MOTION: Move to remand the matter to the hearings officer to conduct the rehearing authorized by the Commission and direct the hearings officer to prepare a record on rehearing and proposed findings of fact and conclusions on reconsideration.

Conclusion

If the Commission decides to grant reconsideration, it will need to adopt one or a combination of motions. As noted above, the examples provided in this memorandum are not exclusive. Staff and legal counsel will be available to assist in developing additional alternatives at the Commission's direction.

dld 1478N  
cc: Service List

## PULP MILL SERVICE LIST

<p>Fred Hansen, Director Dept. of Environmental Quality 811 SW Sixth Avenue Portland, Oregon 97204</p>	<p>Carol A. Whipple, Member Environmental Quality Commission 21755 Highway 138 West Elkton, Oregon 97436</p>
--	--

<p>The Honorable Arno H. Denecke 3890 Dakota Road, SE Salem, Oregon 97032</p>	<p>Linda McMahan, Member Environmental Quality Commission Berry Botanic Garden 11505 SW Summerville Avenue Portland, Oregon 97219</p>
---	---

<p>Lydia Taylor Dept. of Environmental Quality 811 SW Sixth Avenue Portland, Oregon 97204</p>	<p>John Bonine, Esquire Western Natural Resources Clinic University of Oregon School of Law Eugene, OR 97403</p>
---	--

<p>William W. Wessinger, Chair Environmental Quality Commission 121 S.W. Salmon, Suite 1000 Portland, Oregon 97204</p>	<p>Ralph A. Bradley, Esquire Bradley &amp; Gordon, P.C. 296 E. Fifth, Suite 309 Eugene, OR 97401</p>
--	--

<p>Emery N. Castle, Vice Chair Environmental Quality Commission Oregon State University 307 Ballard Hall Corvallis, Oregon 97331</p>	<p>Michael R. Campbell, Esquire Stoel Rivers Boley Jones &amp; Grey 900 SW Sixth Avenue, Suite 2300 Portland, OR 97204</p>
--	--

<p>Henry Lorenzen, Member Environmental Quality Commission Corey, Byler, Rew, et. al. P.O. Box 218 Pendleton, Oregon 97801</p>	<p>Brian J. King, Esquire Holland &amp; Hart West One Plaza, Suite 1400 Boise, Idaho 83702</p>
--	--

<p>Jay T. Waldron, Esquire Schwabe, Williamson &amp; Wyatt 1211 S.W. Fifth Avenue Portland, Oregon 97204</p>	<p>Peter Linden, Esquire City Attorney P.O. Box 278 St. Helens, Oregon 97051</p>
--	--

<p>Linda K. Williams, Esquire 1744 N.E. Clackamas Street Portland, Oregon 97232</p>	<p>Larry Knudsen, Esquire Department of Justice 1515 SW Fifth Avenue, Suite 410 Portland, OR 97204</p>
---	--

Richard Baxendale, Esquire  
506 National Building  
1008 Western Avenue  
Seattle, Washington 98104

1500N



# Western Environmental Law Clinic

Law Center • University of Oregon • Eugene, Oregon 97403 • 503-346-3823 • FAX: 503-346-3985

Michael D. Axline  
John E. Bonine  
Attorneys

Kathryn Cannon  
Office Manager

February 14, 1992

Mr. Fred Hansen  
Director  
Oregon Department of Environmental Quality  
811 S.W. Sixth  
Portland, OR 97204

State of Oregon  
DEPARTMENT OF ENVIRONMENTAL QUALITY

**RECEIVED**  
FEB 18 1992

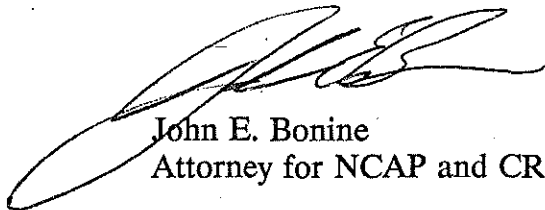
OFFICE OF THE DIRECTOR

Re: NPDES Permit Nos. 3754-J, 100715

Dear Mr. Hansen:

Please note the changes marked in handwriting on pages 4 and 5 of NCAP/CRU's Exceptions filed on February 13, 1992. The corrected pages are attached and have been faxed to all parties.

Sincerely,



John E. Bonine  
Attorney for NCAP and CRU

Enclosure

cc: Judge Arno Denecke  
All Counsel

## EXCEPTIONS: AOX

### I. INTRODUCTION: CONTRASTING POLICIES

Two recent government actions affecting the shared Northwest environment stand in glaring contrast.

- > The government of British Columbia on January 17, 1992, ordered bleached kraft pulp mills to eliminate all organochlorine (AOX)<sup>2</sup> discharge within 8-10 years and to reduce AOX to 1.5 kg/ADT (as a monthly average) by 1995.
- > On the other hand, the EQC Hearings Officer on January 2, 1992, proposed to eliminate the regulation that would control AOX discharges -- abandoning even the lax 2.6kg/ADT monthly limit (and 1.5 average ~~monthly~~ <sup>yearly</sup> limit) proposed by DEQ two years ago.

To put the current proceeding in context, consider the following:

(1) Nearly three years ago, DEQ, using its Best Professional Judgment based on the technology as of 1989, set the annual discharge limit of AOX at 1.5 kilograms per air-dried metric ton of pulp for Oregon mills, and the monthly limit at 2.6.

(2) Washington also set a 1.5kg/AOX standard, and EPA set the same standard for the State of Idaho.

---

<sup>2</sup> Adsorbable Organic Halogens (AOX) is a measuring tool for determining the quantity of organochlorine compounds discharging into the Columbia River and other ecosystems.

(3) Last month, abandoning its previous lax standards of 2.5 kg AOX, British Columbia enacted B.C. Reg. 13/92(6), requiring zero discharge of AOX by 2002 and 1.5 monthly by 1995.<sup>3</sup>

In light of the new British Columbia regulations, even DEQ's 1.5/2.6 AOX limit in the permits/ICSs for Boise Cascade and James River, proposed in 1989, is outdated. Oregon regulations that were once at the forefront are falling behind as other governments in the region move forward. Incredibly, the Hearings Officer has proposed a further step backward from the requirements of the Clean Water Act and suggested that the AOX limits not be included in the permit at all.

- 
- <sup>3</sup> S.1 (1) Every permittee that operates a pulp mill or pulp and paper mill which uses chlorine or chlorine compounds to bleach pulp shall, on or before June 30, 1992, submit to the director a plan and time schedule which will enable the Lieutenant Governor in Council to amend B.C. Reg. 470.90 to ensure the elimination of AOX produced in the bleaching process from liquid effluent discharged into the environment.
- (2) Every permittee that operates a pulp mill or pulp and paper mill which uses chlorine or chlorine compounds to bleach pulp shall
- (a) meet a discharge limit of a monthly average of 1.5 kg of AOX/ADt on or before December 31, 1995, and
- (b) eliminate AOX produced in the bleaching process on or before December 31, 2002.
- (3) A permittee under subsection (2) is exempt from the requirement to meet the discharge limit of a monthly average of 1.5 kg AOX/ADt on or before December 31, 1996 if that permittee
- (a) on or before June 30, 1992 submits to the director a plan and time schedule for the elimination of AOX produced in the bleaching process on or before December 31, 2000, and
- (b) receives written confirmation from the director that the submitted plan and time schedule acceptable.
- (4) A permittee under subsection (3) whose plan and time schedule is confirmed shall eliminate AOX produced in the bleaching process on or before December 31, 2000. (Appendix A)



# Western Environmental Law Clinic

Law Center · University of Oregon · Eugene, Oregon 97403 · 503-346-3823 · FAX: 503-346-3985

Michael D. Axline  
John E. Bonine  
Attorneys  
Kathryn Cannon  
Office Manager

July 15, 1992

Mr. Fred Hansen, Director  
Oregon Department of Environmental Quality  
811 S.W. Sixth Avenue  
Portland, Oregon 97204

RE: Consolidated contested case hearings on NPDES Permit Nos. 100715 and 100716,  
issued to the City of St. Helens and James River II, Inc.

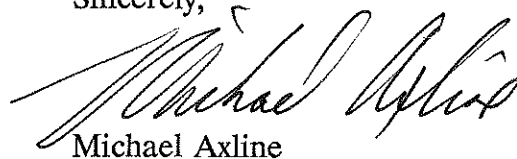
Dear Mr. Hansen:

Enclosed for filing in the above-entitled matter is NCAP/CRU's Memorandum in Opposition to the Petitions of James River, Boise Cascade, and the City of St. Helens for Reconsideration or Rehearing. Copies of these documents have been sent by first class mail to the persons on the service list, including Hearings Officer Arno Denecke.

If the Environmental Quality Commission decides to allow oral argument on the petitions, NCAP/CRU requests that Mark Chernaik, a third-year law student properly certified under Oregon's law student appearance rule, be allowed to speak on behalf of NCAP/CRU.

Thank you for your assistance.

Sincerely,



Michael Axline

encl.

cc. William Wessinger, Chair,  
Environmental Quality Commission  
Service List



**BEFORE THE ENVIRONMENTAL QUALITY COMMISSION  
OF THE STATE OF OREGON**

In the matter of the	)	
NPDES Waste Discharge	)	NCAP/CRU'S MEMORANDUM IN
Permit No. 3754-J,	)	OPPOSITION TO THE PETITIONS
James River II, Inc.,	)	BY JAMES RIVER, BOISE CASCADE
Wauna Mill, and the NPDES	)	AND THE CITY OF ST. HELENS FOR
Waste Discharge Permit	)	RECONSIDERATION OR REHEARING
No. 100715, City of	)	
St. Helens	)	
_____	)	

James River II, Boise Cascade Corporation, and the City of St. Helens ask this Commission to delete enforceable pollution controls on their organochlorine (AOX) discharges. The petitions are based on two flawed premises. The first is that the mills may only approach the 1.5 kg AOX/ADMT limit. In fact, new evidence the mills themselves submit shows that they could easily surpass the limit that this Commission has adopted. The second is that the decision by the Washington State legislature to delay imposition of AOX limits is trendsetting. In fact, the decision is regressive. Should the Commission adhere to its order, Washington will stand alone among Northwest jurisdictions, including Oregon, Idaho and the Province of British Columbia, which all have adopted strong controls against unfettered discharges of AOX by bleached kraft pulp and paper mills.

However, whatever premises the mills put forth, enforceable limits on AOX discharges, not goals, must remain in the permits. The limits are required by the Clean Water Act.

## I. THE MILLS CAN MEET OR SURPASS A LIMIT OF 1.5 KG AOX/ADMT.

### A. The mills' evidence shows that they can meet or surpass the 1.5 kg AOX/ADMT limit.

The mills repeatedly, but incorrectly, assert that this Commission should remove the 1.5 limit because they only may meet the limit. However, the documents the mills rely on to support this assertion show that they can meet a tighter limit by substituting chlorine dioxide for gaseous chlorine in the bleaching stage. Appendix A to the mills' petitions shows that with full chlorine dioxide substitution, the Simpson Tacoma Kraft Company mill in Washington can achieve a limit of 0.6 kg AOX/ADMT.<sup>1</sup> The mills have pledged to install chlorine dioxide substitution. Thus, if the mills can operate a technology with the same effect as a nearby mill, they can meet and even surpass the limit.

### B. The mills' are free to meet the limit by whatever means they choose.

The mills assert that the limit forces them to invest in one technology - oxygen delignification. In fact, the mills are free to meet the limit by whatever means they choose. They could comply with the limit by adopting any one of four technological processes: 1) chlorine dioxide substitution; 2) oxygen delignification in addition to chlorine dioxide substitution; 3) oxygen delignification instead of chlorine dioxide substitution; 4) chlorine-free bleaching. Thus, the issue is not whether the mills can meet the limit. They can. The surest way to do so is through oxygen delignification, but this method is not required of the mills. The issue is what process changes they will

---

<sup>1</sup> According to the mills' evidence, the Simpson Tacoma Kraft Company "has made 100% chlorine dioxide substitution production runs or chlorine free runs which resulted in an AOX of 0.6 kg/tp after secondary treatment." BC's Petition for Reconsideration, at A-1.

make in order to do so. The mills simply seek to avoid the responsibility of ensuring that the outcome of whitening their pulp complies with the law.

C. The cost of meeting the limit is economically achievable.

Even if the mills must, contrary to their own evidence, install oxygen delignification, the costs to the mills of complying with the limit are economically achievable. The Department of Environmental Quality (DEQ) studied the financial health of the mills, and determined that spending \$176.7 million on pollution control equipment by each mill was economically achievable. (Testimony of Ronald A. Maus, DEQ-3 at 22). This Commission adopted the Department's findings, agreeing that the required BAT was economically achievable. (Final Order at 18). James River claims that oxygen delignification will cost it an additional \$25 to \$95 million dollars (depending on the need for a new recovery boiler) above the \$20 million dollars it will spend on chlorine dioxide substitution. (JR Opening Brief at 28). Boise Cascade claims that oxygen delignification will cost it an additional \$40 million dollars above the \$37 million dollars it will spend on chlorine dioxide substitution. (BC Petition for Reconsideration at 5).<sup>2</sup> Thus, the total cost of the pollution control equipment that the mills claim is needed is far below the costs that this Commission found that they could economically achieve.<sup>3</sup>

---

<sup>2</sup> According to DEQ, "the evidence . . . indicates that the mill estimates substantially overestimate the probable costs." DEQ's Proposed Findings of Fact and Conclusions of Law at 7.

<sup>3</sup> Congress intended the Clean Water Act to force polluters to use the best available technology "economically achievable" even if the costs were not economically comfortable. The Court of Appeals for the Ninth Circuit has stated that "BAT should represent a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges." NRDC v. EPA, 863 F.2d 1420, 1426 (9th Cir. 1988) (emphasis added) (citing EPA v. National Crushed Stone Ass'n, 449 U.S.

## II. BY DELAYING CONTROL OF AOX DISCHARGES, WASHINGTON STANDS ALONE AMONG NORTHWEST JURISDICTIONS

The mills assert that because the Washington Legislature has overruled its state agency,<sup>4</sup> and delayed imposing AOX limits until 1995, that this Commission should abandon the AOX limit it adopted. The mills portray the Washington Legislature's decision as a bellwether. In fact, Washington is the only jurisdiction in the region that has fallen behind on AOX controls.

In Idaho, Region X of the EPA has placed a limit of 1.5 kg AOX/ADMT on AOX discharges from the Potlatch bleached kraft pulp mill.

In British Columbia, on June 12, 1992, the Minister of the Environment confirmed that regulations that limit AOX discharges from bleached kraft pulp mills to 1.5 kg AOX/ADMT, by 1995, will come into force on July 1, 1992, despite intense lobbying by industry.<sup>5</sup> The regulations go further, banning all AOX discharges by 2002.

In Oregon, this Commission has adopted limits of 1.5 kg AOX/ADMT. DEQ, before this Commission's action, entered into a consent decree with the only other bleached kraft pulp mill in Oregon, Pope and Talbot in Halsey. The consent decree requires the Pope and Talbot mill to install oxygen delignification, which will assure that

---

64, 74, 101 S.Ct. 295, 302, 66 L.Ed.2d 268 (1980)).

<sup>4</sup> The Washington Legislature may be overruled by the courts. Any decision by a State to ignore a substantive requirement of the Clean Water Act is preempted by CWA § 510, 33 U.S.C. § 1370, which establishes a federal floor for water pollution control.

<sup>5</sup> See Appendix A. June 12, 1992. News release of the Ministry of Environment, Lands and Parks, Province of British Columbia.

this mill will meet a limit of 1.5 kg AOX/ADMT.<sup>6</sup>

In Northern California, the Louisiana-Pacific Corporation, announced, in May, that, within three years, it will voluntarily proposed to eliminate its discharges of AOX from its mill in Humboldt County by substituting hydrogen peroxide and oxygen for all chlorine compounds.<sup>7</sup>

### III. NO ONE BENEFITS BY DELAY.

The mills assert that the Commission would benefit by delaying imposition of AOX controls until November, 1995, when the EPA intends to promulgate national effluent guidelines for AOX discharges from pulp and paper mills. In fact, no one, not even the mills, would benefit by further delay.

The mills first argue that the delay is warranted to take advantage of EPA's expertise in developing pollution control regulations. However, EPA expertise on the control of AOX discharges is already available after EPA's issuance, in March, of a new permit to a bleached kraft pulp mill in Idaho. The limit that EPA developed for the Potlatch mill is identical to the limits that the Commission approved for Oregon.

Had it not been for the Washington Legislature's override of its Department of Ecology, the entire Northwest would be in harmony with the limit EPA crafted.

---

<sup>6</sup> The mills hold up the consent decree between the Department and the Pope and Talbot mill as an example that this Commission should follow. What they fail to mention is that the consent decree requires Pope and Talbot to install the technology that the mills seek to avoid by their petition. In the Matter of: Pope & Talbot, Inc. Order on Consent (November 7, 1990).

<sup>7</sup> See Appendix B. Letter of May 12, 1992, from Joe Wheeler, Jr., Division Manager, Louisiana-Pacific Corporation, Western Division, to Martha Prothro, Assistant Administrator for Water, Office of Water, U.S. Environmental Protection Agency.

Second, the mills argue that delay is warranted because EPA may set a more lenient limit for AOX discharges. They imply that Oregon mills may be subject to a stricter limit than others. However, EPA itself has determined that pollution control technology for AOX discharges has advanced so rapidly that even the 1.5 kg AOX/ADMT limit is outdated, foreshadowing only stricter federal standards for AOX discharges<sup>8</sup>. As the mills' evidence proves, current technology is capable of achieving 0.6 kg AOX/ADMT. There is no basis for asserting that EPA will adopt, in 1995, an AOX limit that is more lenient than the one it has already adopted for the Potlatch mill.

Third, the mills argue that the delay is warranted so that the Commission may use an alternative parameter to AOX that EPA may develop. The mills contend that the current AOX parameter may not be an accurate indicator of the environmental harm that AOX discharges cause. However, AOX discharges must be regulated regardless of whether they cause environmental harm. Further, without the AOX parameter, regulators would be forced into placing limits on each individual compound in an AOX discharge. Such limits would be far more costly to develop and to monitor. EPA used the AOX parameter in Idaho. The mills themselves propose using the AOX parameter in replacing the limit with a goal. These actions further support the validity of the AOX

---

<sup>8</sup> "In a recent report by McCubbin he relates that . . . 'Organochlorine discharges from pulp mills were not widely recognized as a problem until 1988, and it is only since then that widespread laboratory research and industrial scale experimentation has been undertaken in AOX control technology. [I]n 1988, . . . we visualized that about five years development would be required for the technology to control AOX discharges to under 1.5 kg/ton pulp. The fact that this is now laughably outdated . . . demonstrates the rapid development in knowledge in this field.' The changes referenced by McCubbin result now in the achievement of AOX levels for softwood kraft pulp in the range of 0.5 kg/ton of production." (emphasis added)  
Response to Comments NPDES Permit No. ID-000116-3 Potlatch Corporation, U.S. E.P.A. Region 10, March 6, 1992.

parameter.

#### IV. OXYGEN DELIGNIFICATION IS DESIRABLE

A clear benefit of the 1.5 kg AOX/ADMT limit is that the mills may adopt oxygen delignification. This technology can help the mills eliminate AOX discharges altogether<sup>9</sup> and provide other long-term environmental and economic benefits.

The EPA has found that oxygen delignification: 1) achieves greater reductions in the discharge of AOX, in combination with chlorine dioxide substitution, than chlorine dioxide substitution alone;<sup>10</sup> 2) can allow mills to eliminate the use of chlorine containing bleaches, thereby eliminating AOX discharges altogether;<sup>11</sup> and 3) reduces the discharge of other pollutants, including biochemical oxygen demand, by 50%<sup>12</sup>. Further, according to Canadian experts, oxygen delignification reduces operating costs by about \$12 for every ton of pulp produced.<sup>13</sup>

The mills portray oxygen delignification as new and unproven. In fact, the use of oxygen delignification by bleached kraft pulp mills is widespread. At least nineteen

---

<sup>9</sup> The elimination of pollutant discharges is the primary goal of the Clean Water act. "It is the national goal that the discharge of pollutants into navigable waters be eliminated." CWA § 101(a)(1), 33 U.S.C. § 1251(a)(1).

<sup>10</sup> See Appendix C, pages 1-2. Summary of Technologies for the Control and Reduction of Chlorinated Organics from the Bleached Chemical Pulping Subcategories of the Pulp and Paper Industries at 25-26.

<sup>11</sup> See Appendix C, page 4. Id. at 28. Moreover, by achieving chlorine-free bleaching of pulp, the mills will profit from supplying a growing public demand for chlorine-free bleached paper.

<sup>12</sup> See Appendix C, page 1. Id. at 25.

<sup>13</sup> J. Hocking, (1991) Regulation of Discharge of Organochlorines from Pulp Mills in Canada ENVIRONMENTAL MANAGEMENT 15;195-204 at 197.

bleached kraft pulp mills in the United States have already installed oxygen delignification.<sup>14</sup>

## V. THE CLEAN WATER ACT REQUIRES A LIMIT ON AOX DISCHARGES.

### A. The Clean Water Act requires limits on AOX discharges even prior to EPA action.

Under the Clean Water Act, this Commission must insure that polluters discharging AOX discharge no more than those plants using the "Best Available Technology Economically Achievable" (BAT) - even if the EPA has not yet promulgated guidelines for use nationally.<sup>15</sup> This interpretation of the Clean Water Act is strongly supported by case law and EPA statements. According to the United States Court of Appeals for the District of Columbia Circuit:

"States issuing permits pursuant to the [CWA] stand in the shoes of the agency, and thus must similarly pay heed to [CWA § 301(b)'s] technology-based standards when exercising their [Best Professional Judgment]. . . . States are required to compel adherence to the Act's technology-based standards regardless of whether EPA has specified their content . . . ." (emphasis added). NRDC v. EPA, 859 F.2d 156, \_\_\_ (D.C. Cir. 1988).

According to Region 10 of the EPA:

---

<sup>14</sup> See Appendix C, pages 5-6. U.S. EPA (1990) Summary of Technologies for the Control and Reduction of Chlorinated Organics from the Bleached Chemical Pulping Subcategories of the Pulp and Paper Industries, at 29-30.

<sup>15</sup> States may only issue NPDES permits which meet (A) all applicable requirements of the Clean Water Act or (B) (prior to necessary EPA action) other "conditions" the state "determines are necessary to carry out the provisions" of the Clean Water Act. CWA § 402(a)(1), 33 U.S.C. § 1342(a)(1). One provision requires the EPA to develop effluent limitation guidelines for "non-conventional" pollutants, that represent the amount of pollution reduction achieved by plants using the "best available technology economically achievable" (BAT). CWA § 301(b)(2)(F), 33 U.S.C. § 1311(b)(2)(F). AOX falls under the subparagraph (F) group of non-conventional pollutants. However, EPA has not yet developed effluent limitation guidelines for AOX for bleached kraft pulp mills. Therefore, under CWA § 402(a)(1), 33 U.S.C. § 1342(a)(1), Oregon itself must determine what limits for the mills' discharge of AOX represent BAT.



"Under 40 CFR 122.44(a), limits must be included in permits based on: effluent limitations and standards promulgated under 301 of the CWA . . . on case-by-case effluent limitations determined under section 402(a)(1) of the CWA, or on a combination of the two . . ." (emphasis added) Response to Comments NPDES Permit No. ID-000116-3 Potlatch Corporation, U.S. E.P.A. Region 10, March 6, 1992.

NCAP/CRU believes that the statement "Oregon is not required to impose BAT limits on the discharge of organochlorines," (Final Order at 14) is erroneous, and does not reflect the decision made by the Commission at its March 12, 1992, meeting.

B. Environmental harm is irrelevant to the requirement for a limit on AOX discharges.

A technology-based limit is required regardless of the environmental effects of the discharge; arguments presented by the mills that no harm has been proved as a result of their discharges are simply irrelevant.<sup>16</sup>

Congress, in enacting the Clean Water Act, understood how difficult it is to scientifically prove that a particular pollutant causes harm. A requirement that harm be shown before a pollutant was regulated would often result in regulation coming far too late. Thus, to achieve the Clean Water Act's primary objective, "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters," Congress required pollution regulation even in the absence of harm. Accordingly, regulators are to act as if any pollutant discharge causes harm.

---

<sup>16</sup> The mill's discharges into the Lower Columbia River have a probable, if not proven, severe adverse effect on water quality, human health, and wildlife. The amount of the mills' discharges into the Lower Columbia River is immense. As of 1990, the mills discharged nearly 60 million pounds per year of organochlorine compounds. This discharge consists of a mixture of between 300-1000 different chemicals, many of which are known or suspected human carcinogens.

C. The numerical limit cannot be replaced with an unenforceable "goal."

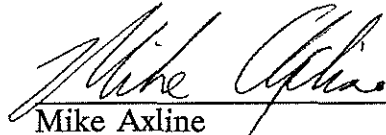
Under the Clean Water Act, discharge limits in NPDES permits granted by states must be enforceable. EPA can approve only those State permit programs that have adequate authority "to abate violations of the permit or the permit program, including civil and criminal penalties and other means of enforcement." CWA § 402(b)(7). If the limit is replaced by a goal, the mills would be subject to no enforcement action whatsoever for failing to reduce their AOX discharges by any amount.


In addition, discharge limits in NPDES permits must be numerical. "All pollutants limited in permits shall contain limitations . . . expressed in terms of mass . . ." 40 C.F.R. § 122.45(f). Merely requiring the mills to install a technology of their own choosing, as the mills propose, is not a limitation expressed in terms of mass. Permit limits must be objective, numerical targets for polluters to meet, to which appropriate technology must then be applied.

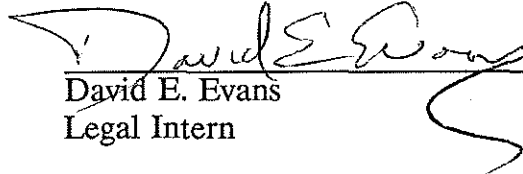
## VI. CONCLUSION

NCAP/CRU request that this Commission deny the mills' requests for reconsideration or rehearing of the enforceable pollution controls that the Commission adopted in March. Nothing has changed since then that warrants abandoning Oregon's stance on harmful AOX discharges. In fact, new evidence and recent actions by other Northwest jurisdictions favor tightening controls on AOX discharges with an eye toward eliminating them through use of non-chlorine bleaches by the year 2000.

Signed this 15th day of July, 1992

  
\_\_\_\_\_  
Mike Axline  
Counsel for NCAP/CRU

  
\_\_\_\_\_  
Mark Chernaik  
Legal Intern

  
\_\_\_\_\_  
David E. Evans  
Legal Intern

**Appendix A**

**News Release of the  
Ministry of Environment, Lands and Parks  
Province of British Columbia**

**June 12, 1992**



Province of  
British Columbia

# NEWS RELEASE

Ministry of Environment, Lands and Parks

For Immediate Release

1992:ELP95

June 12, 1992

## GOVERNMENT CONFIRMS NEW PULP MILL EFFLUENT STANDARDS

VICTORIA – Environment Minister John Cashore confirmed today that the new AOX (chlorinated organic compounds) effluent standards will come into force on July 1, 1992.

In January, the government required all mills to submit plans, by June 30, 1992, to reduce AOX produced in the bleaching process to less than 1.5 kilograms per air-dried tonne by 1995, and to virtually eliminate AOX by the year 2002. These standards will be proclaimed on July 1.

Subsequent to the January announcement, a consultation process was initiated with key stakeholder groups, including industry and environmental organizations, to focus on the plans to be developed by industry.

"This consultation process has not been as productive as I'd hoped," said Cashore. "We need to work closely with all interested parties to find solutions for some very difficult problems. We are listening to the concerns expressed on all sides, but at the same time, we are standing firm in our commitment to the standards we established earlier this year."

BC Environment expects to receive the plans from each mill by the end of June. To help meet this challenge, the pulp mills have commissioned Paprican, the research and technology arm of the Canadian Pulp and Paper Association, to develop a review of current and proposed technology to eliminate AOX from the bleaching process.

"The government remains committed to a multi-stakeholder process to review all pulp mill plans and technological reports, and to maintain an ongoing monitoring and advisory role," Cashore said.

(more)

## Government Working with Industry.../2

"We recognize that because of evolving technology, the plans submitted this month to meet the 2002 goal will need to be refined as the process continues," said Cashore. "There is still a great deal of research to be done on the technological aspects of AOX reduction. It will be an ongoing process until we achieve our final goals."

Cashore also announced that a study is being initiated to determine:

- the potential costs involved for representative mills to meet the standards;
- the estimated operating costs after converting to new technology;
- key factors affecting B.C.'s kraft pulp industry, such as fibre supply, foreign exchange rates and markets; and
- how B.C.'s AOX standards compare with key pulp-exporting countries.

The study will be carried out over the month of June, with results to be made public later this summer, along with all mill plans and technological reports.

"We are still a long way from agreement," Cashore said. "Throughout the process, we are committed to in-depth consultation on this study with key stakeholders.

"I would also like to thank all those who participated in the consultations to date, and congratulate industry for their hard work on this issue. I would like to point out that many of the mills have already made great progress towards improving their effluents. With continued effort by all parties, our goals will be achieved."

- 30 -

### Contact:

Jon O'Riordan 387-9877  
Assistant Deputy Minister  
Environmental Protection Division  
Ministry of Environment, Lands and Parks  
Victoria, B.C.

**Appendix B**

**Letter of May 12, 1992  
From Joe Wheeler, Jr.  
Western Division Manager  
Louisiana-Pacific Corporation  
To Martha Prothro  
Assistant Administrator for Water  
Office of Water  
United States Environmental Protection Agency**

COPY



Louisiana-Pacific Corporation

Western Division

P.O. Box 158, LP Drive  
Samoa (Humboldt County), California 95564  
707 / 443-7511

May 12, 1992

Martha Prothro  
Assistant Administrator for Water  
Office of Water  
U.S. Environmental Protection Agency  
401 "M" Street, S.W.  
Washington, D.C. 20460

and

Harry Seraydarian  
Director, Water Management Division  
U.S. Environmental Protection Agency  
Region IX  
75 Hawthorne Street  
San Francisco, California 94105

Re: Proposal for Pollution Prevention by the Elimination  
of Chlorine Bleaching at the Louisiana-Pacific  
Corporation Pulp Mill in Samoa, California

Dear Ms. Prothro and Mr. Seraydarian:

As requested by Mark Luttner, the Director of EPA's Pulp and Paper Cluster, enclosed please find the Proposal for Pollution Prevention by the Elimination of Chlorine Bleaching at the Louisiana-Pacific Corporation ("L-P") Pulp Mill in Samoa, California. To L-P's knowledge, the Samoa Pulp Mill would be the first pulp mill in the United States to produce market kraft bleached pulp continuously without any chlorine chemistry.

The production of absolutely chlorine-free ("ACF") pulp would eliminate the discharge of chlorinated dioxins and furans, Absorbable Organic Halides ("AOX"), chloroform, and other chlorinated organic contaminants. In combination with the project for steam stripping of the condensates, which is already underway at the Samoa



Ms. Martha Prothro  
Mr. Harry Seraydarian  
May 12, 1992  
Page Two of Three

mill, converting to ACF pulp also will significantly reduce the characteristics of the effluent that adversely affect recreational users, particularly effluent color and odor.

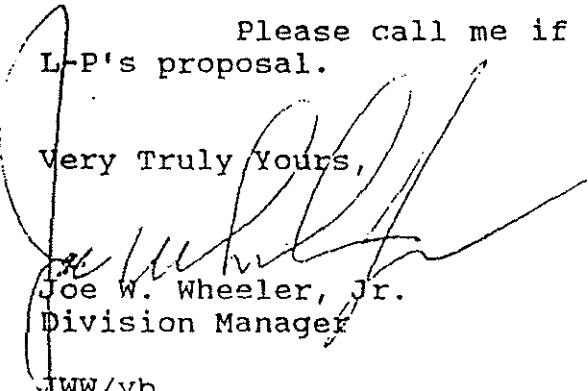
L-P's proposal describes the process changes necessary to produce ACF pulp and provides specific information on the environmental benefits that would result from the elimination of chlorine. This proposal also identifies the regulatory issues that L-P would like to discuss with the U.S. Environmental Protection Agency that relate to the significant process changes which will be involved in the production of ACF pulp.

L-P is prepared to commit to the total elimination of chlorine at the Samoa mill, even though the market for ACF pulp is not established. However, L-P will need to identify and develop new marketing opportunities for ACF pulp and to work with its existing customers who have come to rely on the Samoa mill as a dependable supplier of chlorine-bleached pulp. Once the necessary process changes are completed, L-P proposes to fully implement ACF pulp production within three years. Prior to that time, L-P would progressively increase the level of ACF pulp production as dictated by market conditions.

L-P looks forward to discussing this proposal with the Pulp and Paper Cluster, Region IX, and others at EPA. The production of ACF pulp at the Samoa mill offers a unique opportunity to further the shared goals of EPA and L-P to prevent pollution and eliminate the discharge of dioxin and other toxic pollutants through the implementation of an innovative technology. The opportunity to eliminate totally the use of chlorine in a United States pulp mill will depend, in large part, on a positive and proactive response from EPA.

Please call me if you have questions concerning L-P's proposal.

Very Truly Yours,



Joe W. Wheeler, Jr.  
Division Manager

JWW/yb

Ms. Martha Prothro  
Mr. Harry Seraydarian  
May 12, 1992  
Page Three of Three

Enclosure

cc: William Reilly, EPA Administrator  
Henry Habicht, EPA Deputy Administrator  
Mark Luttner, Special Assistant to the  
Assistant Administrator for Water  
Daniel McGovern, EPA Region IX,  
Regional Administrator  
John Wise, EPA Region IX, Deputy  
Regional Administrator  
Benjamin Kor, Executive Officer, California  
Regional Water Quality Control Board,  
North Coast Region  
Bob Klotz, Esq., Department of Justice

To: Dave Evans, Mark Habicht  
3 pages

SUMMARY OF TECHNOLOGIES  
FOR THE CONTROL AND  
REDUCTION OF CHLORINATED ORGANICS  
FROM THE BLEACHED CHEMICAL PULPING  
SUBCATEGORIES OF THE  
PULP AND PAPER INDUSTRY

April 27, 1990

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Office of Water Regulations and Standards  
Office of Water Enforcement and Permits  
401 M Street S.W.  
Washington, D.C. 20460

## OXYGEN DELIGNIFICATION

### Technology Description:

Oxygen delignification (OD), also referred to as oxygen bleaching, developed into a commercially feasible process in the late 1960s and early 1970s. The first installation of OD was in South Africa, however, until recently, the majority of installations have been in Sweden where oxygen delignification has been utilized as an economical alternative to secondary treatment, and in Japan, where oxygen costs are low. Oxygen delignification is a pulp treatment stage following final brownstock washing, but prior to bleaching with chlorine or chlorine derivatives. In the process, brownstock pulp is treated with oxygen under pressure in an alkaline environment to remove additional lignin and to alter other color producing material. Although oxygen delignification systems are often co-located with bleacheries, they are chemically linked to the digestion process in that washwaters from OD stages are returned to the chemical recovery system along with waste cooking liquor for recovery of inorganic chemicals and heat value from the organic load removed from the pulp. This removal of organic load accomplished in OD reduces the downstream chemical requirements for pulp bleaching, and attendant formation of chlorinated organics.<sup>22</sup>

Oxygen delignification was originally developed as a high consistency (25-28%) process, however with the development of the high shear mixer, medium consistency (10-12%) operation became feasible.<sup>8</sup> Consistency selection is dependent on capital cost, the degree of delignification and steam, alkali and power consumption. High consistency systems are slightly higher in cost than medium consistency systems due to the need for a pulp press prior to the reactor.<sup>8</sup> Delignification in the two systems is comparable with the high consistency systems running in the range of 45-50% as compared to medium consistency systems which run in the range of 40-45%.<sup>8</sup> Steam and alkali consumption are higher in the medium consistency systems whereas power consumption is higher in high consistency systems.<sup>8</sup>

OD is compatible with other new technologies aimed at reducing bleach plant effluents and OD bleached pulps are reported to be equal or superior to conventionally bleached pulps with respect to tear strength, brightness stability, pitch removal, beating energy and cleanliness.<sup>8,75</sup> Because approximately one-half of the original residual lignin is removed during the oxygen stage, the number of subsequent conventional bleaching stages may be reduced. It is now well-established commercially that for bleached softwood kraft pulp, a four-stage sequence such as C/DEHD following oxygen delignification is sufficient to attain 90+ GE brightness, and that a three-stage sequence such as CED is adequate to achieve an 85 to 90 GE brightness level.<sup>75</sup>

### Effectiveness:

The environmental benefits associated with OD have been documented in many publications. These benefits accrue from two facts. The first is that by reducing the amount of lignin carried forward with the pulp, levels of BOD, COD and color are reduced in the effluent discharged. This reduction has been reported to be 40-55% for BOD, 45-55% for COD and 60-75% for color.<sup>8</sup> Secondly an oxygen delignification stage placed ahead of chlorination reduces

the amount of chlorine conventionally required by about 50% and reduces the amount of chlorine dioxide required for a given brightness, resulting in a reduction in the amount of chlorinated organics discharges.<sup>38,57</sup> A review of Table V-1 presented earlier shows that OD reduces AOX levels from 7.9 kg/ADMT to 4.7 kg/ADMT (41% reduction).<sup>121</sup> Another study shows that TOCl formation from a kraft softwood pulp bleach plant was reduced from 5 to 5.5 kg/metric ton of pulp to 2.5 to 3.5 kg/metric ton of pulp (35-50%).<sup>58</sup> A third study reported a reduction in total organic chloride from 5.4 kg /ton of pulp using a D(30)/C(70)EDED sequence to 0.7 kg /ton of pulp using a ODEoD sequence, for bleaching softwood Kraft pulp.<sup>61</sup>

Use of OD systems has not completely eliminated formation of 2378-TCDD and 2378-TCDF, but at three U.S. mills using OD systems levels found tend to be in the lower range of values encountered at U.S. mills. CDD and CDF data from three mills with oxygen delignification are provided in Table V-4. The CDD and CDF levels for most of the effluents and pulp sampled were below the detection level.

Additional data related to oxygen delignification in combination with other processes such as chlorine dioxide substitution will be presented in subsequent sections.

### **Installations:**

According to a recent article, oxygen delignification systems corresponding to approximately one third of the world bleached kraft pulp production have now been sold.<sup>196</sup> The first OD installation was started up at the SAPPI mill in South Africa in 1970. Since that date, the world's annual production capacity has steadily increased. A November 1987 TAPPI Journal article reported that since 1970, there have been 44 oxygen delignification process startups with a 1988 anticipated annual production capacity in excess of 10 million metric tons per year.<sup>8</sup> The same article broke down the production as of that date as 92% kraft, 60% softwood, 60% high consistency, 50% in Scandinavia and Europe, 20% in North America and 20% in Japan.<sup>8</sup> To illustrate the extent to which OD has been implemented in Sweden, production and process data are presented in Table V-5. From this table it can be seen that at the present date 86% of Swedish permitted bleached kraft production is subjected to oxygen delignification and that by the end of 1990 it will be 88%.

Those facilities that are presently planned, under construction or in operation are presented in Table V-6. A review of this listing shows that the 1990 anticipated annual production capacity will be in excess of 14 million metric tons per year, that the majority of production is still kraft softwood, the majority of new installations are in North America and that since about 1984, the vast majority of installations are based on medium consistency.

### **Implementation:**

#### **Compatibility With/Impact on Pulp and Other Processes**

Several authors have compared conventional bleaching processes with a process having an oxygen delignification stage. Impacts on pulp and processes presented in the literature include those related to the recovery system, chemical make up and usage, product quality, process control and compatibility. Routing the wash water from the

TABLE V-4

**DIOXIN/FURAN DATA FOR THREE  
BLEACHED KRAFT MILLS WITH OXYGEN DELIGNIFICATION<sup>201</sup>**

	<u>MILL 1</u>	<u>MILL 2</u>	<u>MILL 3</u>
WOOD TYPE (LINE 1)	SWD	SWD	HWD
(LINE 2)	-	HWD	HWD
OXYGEN DELIGNIFICATION (LINE 1)	YES	YES	NO
(LINE 2)	-	YES	YES
<b>DIOXINS &amp; FURANS</b>			
BLEACHED PULP (LINE 1)			
2378-TCDD, ng/l	ND(1.5)	ND(0.8)	ND(0.4)
2378-TCDF, ng/l	NQ(14)	2.11	2.71
BLEACHED PULP (LINE 2)			
2378-TCDD, ng/l	-	ND(1.0)	ND(0.7)
2378-TCDF, ng/l	-	ND(1.2)	ND(0.6)
Eo FILTRATE (LINE 1)			
2378-TCDD, pg/l	ND(8)	102	ND(5)
2378-TCDF, pg/l	ND(13)	114	95
Eo FILTRATE (LINE 2)			
2378-TCDD, pg/l	-	ND(3)	ND(5)
2378-TCDF, pg/l	-	ND(3)	42
WASTEWATER INFLUENT			
2378-TCDD, pg/l	ND(8)	ND(4)	ND(3)
2378-TCDF, pg/l	ND(8)	NQ(7)	ND(4)
FINAL EFFLUENT			
2378-TCDD, pg/l	ND(10)	NQ(2)	ND(8)
2378-TCDF, pg/l	ND(10)	ND(12)	ND(8)

oxygen delignification process to the recovery system increases the solids load to the chemical recovery furnace, typically by 3-5% and up to 10% if existing brownstock washing is not efficient.<sup>8,31,75</sup> Although recovery of these dissolved solids and lignin contribute to steam generation, the capability of existing recovery furnaces to accept the additional solids loading is uncertain. Possible solutions for those cases where recovery furnaces could not accept additional solids loading would be through the use of anthraquinone and/or polysulfide pulping which is covered in more detail in subsequent sections of this report.<sup>158</sup> Installation of an oxygen stage into an existing conventional system would require caustic for the oxygen stage which is usually met through use of oxidized white liquor. This results in an increased load on the causticizing plant and lime kiln on the order of 3-5% and increasing evaporation

steam requirements on the order of 0-4% for high consistency and 4-10% for medium consistency oxygen bleaching.<sup>8,57</sup> While the oxygen delignification process requires a source of caustic, chemical usage (primarily chlorine and caustic) across the entire facility would be reduced.<sup>8</sup> Oxygen bleaching has a superior ability to decrease shive content and the oxygen bleaching stage is less sensitive (than conventional stages) to kappa number changes in the incoming pulp allowing the control of kappa number within narrow limits.<sup>75</sup> Oxygen bleaching is compatible with other chlorine-free bleaching processes being developed.<sup>75</sup>

TABLE V-5

EXTENDED DELIGNIFICATION, OXYGEN DELIGNIFICATION  
AND BIOLOGICAL WASTEWATER TREATMENT AT  
SWEDISH BLEACHED KRAFT PULP MILLS<sup>116</sup>

MILL LOCATION	MAXIMUM ALLOWED PRODUCTION, 1000 METRIC TONS/YEAR						
	TOTAL	SOFTWOOD	HARDWOOD	EXTEN. DELIG.	OXYGEN DELIG.	BIO. TREAT.	ED+OD +BIO.
Aspa Bruk	115	115	-	-	115	-	-
Gruvon	310	210	100	-	310	310	-
Husum	690	345	345	-	690	-	-
Iggesund <sup>a</sup>	325	217	108	325	217	325	217
Karlsborg	290	290	-	290	-	290	-
Korsnas	325	244	81	325	325	325	325
Monsteras	350	175	175	-	350	350	-
Morrum	375	150	225	-	375	-	-
Norrsundet	252	252	-	-	252	-	-
Skoghall	110	110	-	-	-	110	-
Skutskar	500	360	140	-	360	-	-
Skarblacka	150	<sup>b</sup>	<sup>b</sup>	-	150	150	-
Vallvik	220	220	-	-	220	-	-
Varo	300	300	-	300	300	-	-
Ostrand	322	232	90	-	322	-	-
TOTALS	4,634			1,240	3,986	1,860	542
%	100			27	86	40	12

<sup>a</sup> Oxygen delignification on both lines to be operational in 1990.

<sup>b</sup> No decision regarding production split between softwood and hardwood.

TABLE V-6

WORLDWIDE OXYGEN DELIGNIFICATION REFERENCE LIST<sup>a</sup>

<u>COMPANY</u>	<u>LOCATION</u>	<u>COUNTRY</u>	<u>ADMT/D</u>	<u>WOOD</u>	<u>CONSI- TENCY</u>	<u>BLEACH SEQUENCE</u>	<u>START DATE</u>
<b>KRAFT</b>							
Alberta Pacific	Athabasca, ALB	Canada	1400	SWD/HWD	Med.		1992
ASSI Karlsborg	Karlsborg	Sweden	1025	SWD	Med.		1990 <sup>b</sup>
Billerud AB	Gruvön	Sweden	500	SWD	High	OC/DEDED	1972
Bowaters-Southern	Calhoun, TN	USA	1180	SWD/HWD	Med.	OC/DEoD	1990
Canadian Forest Products	Pr. George, BC	Canada			Med.		
Celgar Pulp Company	Castelgar, BC.	Canada	1320				1992
Cellulose d'Aquitaine	St-Gaudens	France	500	HWD	High	OCEDED	1973
Cellulose des Ardennes	Rouvroy	Belgium	520	HWD	Med.		1985
CELPAG	Ribeirau Preto	Brazil	500		High	OC/DEoD	1979
Celulosa Arauco	Arauco	Chile	750		Med.		1989 <sup>b</sup>
Celulosa del Pacifico SA	Mininco	Chile	1050		Med.		1989 <sup>b</sup>
Champion International	Canton, NC	USA	1600	SWD	Med.		1992
Champion International	Courtland, AL	USA	1150	SWD/HWD	Med.		1991
Champion International	Hinton, ALB	Canada	1300	SWD	Med.		1987
Champion International	Pensacola, FL	USA	560	SWD	Med.	OC/DEoD	1987
Champion International	Pensacola, FL	USA	730	HWD	Med.	OC/DEoD	1986
Champion International	Quinnesec, MI	USA	1150		Med.		1990
Chesapeake	West Point, VA	USA	550	HWD	High	C/DOD	1972
Chuetsu Pulp Ind. Co., LTD	Sendai	Japan	550	HWD/SWD	Med.	OCHpHEpD	1986
Chung Hwa Pulp Corp.	Hualien Hsien	Taiwan	445		Med.		1987
Chung Hwa Pulp Corp.	Hualien Hsien	Taiwan	445		Med.		1987
Consolidated Paper	Wisc. Rapids, WI	USA	450	HWD	Med.	OC/DEoD	1980
Daishowa	Shiraoi	Japan	550	HWD	High	OCEHD	1975
Daishowa	Shiraoi	Japan	400	HWD	Med.		1986
Daishowa	Suzukawa	Japan	620	HWD	Med.		1986
Daishowa	Peace River, ALB	Canada	960	SWD	Med.		1990
Eddy Forest Products	Espanola, ONT	Canada	500	SWD	High	OC/DEoHD	1977
Eddy Forest Products	Espanola, ONT	Canada	500	HWD	High	OC/DEHD	1980
Empresa Nacional de Celulosas	Huelva	Spain	965	HWD	Med.	OC/DEoD	
Fiskeby AB	Skarblacka	Sweden	510	HWD/SWD	Med.		1986
Hokuetsu Paper	Niigata	Japan	480	HWD	Med.	OCEHD	1986
Hokuetsu Paper	Niigata	Japan	600	HWD	Med.		1988 <sup>b</sup>
Howe Sound P. & P., LTD	Port Mellon, BC	Canada	1000	SWD	Med.		1990
Iggesunds Bruk AB	Iggesund	Sweden	900	HWD/SWD	Med.	OD/CEopDEpD	1990
International Paper Company	Texarkana, TX	USA					
James River-Marathon, LTD	Marathon, ONT	Canada			Med.		
Jujo Paper	Kushiro	Japan	600	SWD	High	OH	1975
Jujo Paper	Yatsushiro	Japan	550	HWD	Med.		1989
Kemi OY	Kemi	Finland	1055		Med.		1989 <sup>b</sup>
Kishu Paper	Shiraoi	Japan	530	HWD	Med.	OCEHD	1987
Korsnas AB	Gavle	Sweden	1050	HWD/SWD	Med.	OC/DEoDD	1987
Korsnas AB	Marmaverken	Sweden	100		Med.		1983
Louisiana-Pacific Corp.	Eureka, CA	USA	680	SWD	Med.	OC/DEoDED	1989
Mitsubishi	Hachinohe	Japan	1100	HWD	Med.		1988 <sup>b</sup>
Mitsubishi	Shirakawa	Japan	300	HWD	Med.		1986
MoDoCell AB	Husum	Sweden	1000	SWD	High	OC/DEDED	1977
Munksjo AB	Aspa	Sweden	380	SWD	High	OC/DEDED	1973
NCB Vallvik	Vallvik	Sweden	600	SWD	High	OC/DEDED	1978



TABLE V-6 (CON'T)

WORLDWIDE OXYGEN DELIGNIFICATION REFERENCE LIST<sup>a</sup>

<u>COMPANY</u>	<u>LOCATION</u>	<u>COUNTRY</u>	<u>ADMT/D</u>	<u>WOOD</u>	<u>CONSIG- TENCY</u>	<u>BLEACH SEQUENCE</u>	<u>START DATE</u>
New Zealand Forest Prods.	Kinleith	New Zealand	750		Med.		1989 <sup>b</sup>
Norrundet Bruks AB	Norrundet	Sweden	1000	HWD/SWD	High	OC/DEoD	1983
Oji Paper	Ebetsu	Japan	650	HWD/SWD	Med.	OD/CEHD	1986
Oji Paper	Tomakomai	Japan	550	SWD	Med.	OH	1985
OY Schauman	Jakobstad	Finland	900	SWD	Med.		1987
Polser Zellstoff	Polz	Austria	630	SWD	Med.	OD/CEDED	1984
Pope & Talbot Pulp Co.	Halsey, OR	USA		SWD			
Port Westward Pulp	Pt. Westward, OR	USA	750	SWD	Med.	OC/DEoDD	
Potlatch Corporation	Lewiston, ID	USA	1000	SWD	High	OC/DEoD	1991
Procter & Gamble	Oglethorpe, GA	USA	1000	SWD	High	OD/CEoD	1980
Procter & Gamble	Gr. Prairie, ALB	Canada			Med.		1991
PT Indah Kiat Pulp & Paper	Perawang	Indonesia	525		Med.		1988 <sup>b</sup>
Repap Manitoba Inc.	The Pas, MAN	Canada	1200		Med.		
Sanyo-Kokosaku Pulp Co.	Iwakuni	Japan	450	HWD	Med.		1988 <sup>b</sup>
Sappi	Enstra	S. Africa	200	SWD	High	ODED	1970
Sappi	Enstra	S. Africa	500	HWD	High	ODED	1978
Sappi	Ngodwana	S. Africa	575	SWD	High	OD/CED	1985
SCA Pulp AB	Ostrand	Sweden	1000	HWD/SWD	High	OC/DEDED	1980
Simpson Paper Company	Fairhaven, CA	USA	600	SWD	Med.		1989
Sodra Skogsagarna AB	Monsteras	Sweden	1000	HWD/SWD	High	OC/DEDED	1981
Sodra Skogsagarna AB	Morrum	Sweden	420	SWD	Med.		1989
Sodra Skogsagarna AB	Morrum	Sweden	700	HWD	Med.		1989
Sodra Skogsagarna AB	VaroBACKA	Sweden	950	SWD	Med.		1985
Stora Cell AB	Skutskaer	Sweden	650	SWD	High	OC/DEDED	1977
Stora Cell AB	Skutskaer	Sweden	650	SWD	High	OC/DEDED	1978
Suzano de Papel e Celulose	Suzano	Brazil	1365	HWD	Med.		1989
Taio Seishi Paper	Mishima	Japan	525	SWD	Med.	OCEHDD	1986
Taio Seishi Paper	Mishima	Japan	665	HWD	Med.	OD/CEoHEd	1984
Union Camp Corporation	Eastover, SC	USA	650	HWD/SWD	High	OC/DED	1984
Union Camp Corporation	Eastover, SC	USA	1100		Med.		1989 <sup>b</sup>
Union Camp Corporation	Franklin, VA	USA	800	HWD	High	OC/DED	1981
Ust Ilimsk	Ust Ilimsk	USSR	800	SWD	High	OD/CEHDED	1979
V/O Prommash	Svetogorsk	USSR	455	HWD	Med.	OEDEDED	1985
Weyerhaeuser Company	Columbus, MS	USA	1200		Med.	OC/DEoDD	1990
Willamette Industries	Bennettsville, SC	USA	760	SWD/HWD	Med.	OC/DEoD	1990
Xin Hua Paper Mill	Shanghai	China	75	Straw	Med.		1988 <sup>b</sup>
Zaklady Celulozowo	Kwidzyn	Poland	600	SWD	High	OC/DEHD	1978

SULFITE

Bayrische Zellstoff	Kelheim	FRG	160	SWD	High	OEDH	1979
Flambeau Paper	Park Falls, WI	USA	200	HWD	Med.	OH	1987
Hannoversche Papierfabriken	Alfeld-Gronau	FRG	250	SWD	Med.	OCEH	1986
Hunsfos	Hunsfos	Norway	130	HWD/SWD	High	OCEHH	1979
Industrias Forestales SA	Nacimiento	Chile	750		Med.		1989 <sup>b</sup>
PWA Waldhof	Mannheim	FRG	185	SWD	Med.	POsPOaHH	1986
Rauma-Repola	Rauma	Finland	450	SWD	Med.	OCEdH	1983
Severomoravske Celulozky NP	Paskov	Czech.	660	SWD	High		1984
Tofte Industrier	Tofte	Norway	700	SWD	Med.		1983
Weyerhaeuser Company	Cosmopolis, WA	USA	400	HWD/SWD	Med.		1990

TABLE V-6 (CON'T)

WORLDWIDE OXYGEN DELIGNIFICATION REFERENCE LIST<sup>a</sup>

<u>COMPANY</u>	<u>LOCATION</u>	<u>COUNTRY</u>	<u>ADMT/D</u>	<u>WOOD</u>	<u>CONSIS- TENCY</u>	<u>BLEACH SEQUENCE</u>	<u>START DATE</u>
		<u>SPECIALITY</u>					
Korsnas AB	Gavle	Sweden	100	HWD/SWD	Med.		1983
M. Peterson & Son	Moss	Norway	150	SWD	Med.		1980

<sup>a</sup> 8, 116, 123, 137, 155, 157

<sup>b</sup> Order date

Availability

High consistency oxygen bleaching systems require that most of the equipment be fabricated from stainless steel to avoid corrosion.<sup>75</sup> Prices and work schedules could be affected by availability of stainless steel. One reference claims that the stainless steel resource is very tight and that not even Asian sources, which are used by the industry, can meet the demand.<sup>4</sup> The majority of recent oxygen bleaching system installations have been medium consistency. This trend has been influenced, to some degree, by the limited number of high consistency equipment suppliers in certain geographic regions.<sup>8</sup>

Time to Implement

Implementation time will be highly site specific. Where recovery boiler capacity and space are not limiting factors, installation of an OD stage to an existing bleach line can be accomplished in approximately two years. Information obtained from a consulting firm related that six months were required for study with 20 months for installation.<sup>191</sup> However, if major recovery system modifications are necessary, the implementation time for the total system could take up to three years.

Limitations

Limitations identified in the literature are as follows: (a) Cellulose degradation. High consistency oxygen delignification must be limited to approximately 50% of residual lignin in order to avoid excessive pulp strength reduction;<sup>78</sup> (b) Brightness. There is less of a margin than conventional CEDED process, in acquiring high brightness (90% ISO) without deterioration in pulp strength.<sup>61</sup> Brightness of 85-87 ISO can be achieved with short sequence bleaching, however, one source reports that for high brightness pulp, 89-90 ISO, that five stages of bleaching may be required.<sup>72</sup> Another source reports that a pulp brightness of 90 ISO can be achieved on softwood with OC/DE<sub>0</sub>D bleaching.<sup>57</sup>

## Costs:

The literature contains limited capital cost data for oxygen delignification systems. A large amount of data, however, is available with respect to operational costs of OD systems especially as these costs compare to conventional bleach systems.

### Capital Costs

Capital costs for a bleaching sequence including an oxygen stage are reported to cost more than conventional sequences, however, for a new mill these costs are offset by reduced capital costs for other processes such as brownstock washing, chemical preparation, power boiler and effluent wastewater treatment facilities.<sup>57</sup> One literature source reported an installed capital cost of \$8.8 million for a 500 ton/day OD system.<sup>73</sup> This cost compares favorably to a suppliers estimate of installed capital costs for a new 500 ton per day OD facility of \$9-11 million and for new 1000 ton per day facility of \$14-16 million.<sup>112</sup> A second supplier related that the installed cost for a 1000 ADMT/day medium consistency OD facility would range from 80,000,000 to 100,000,000 SEK (\$13-16 million).<sup>157</sup> Another estimate of installed capital costs was obtained from a large consulting firm ranging from \$13.5 million for a hardwood medium consistency OD system to \$19.5 million for a softwood high consistency OD system.<sup>191</sup> These costs, based on several installations are for a 600 air dried bleached tons per day facility and include both pre and post washing in addition to the oxygen delignification system.<sup>191</sup> In comparing system costs, it should be pointed out that high consistency systems are more expensive than a similar sized medium consistency system due to need for a pulp press costing in the range of \$1-4 million.<sup>8</sup> In addition to these estimated costs, costs for three specific facilities are provided in TABLE V-7.

TABLE V-7

### OXYGEN DELIGNIFICATION CAPITAL COSTS\*

<u>COMPANY</u>	<u>LOCATION</u>	<u>PRODUCTION,</u> <u>ADMT/D</u>	<u>CONSIS-</u> <u>TENCY</u>	<u>CAPITAL COST,</u> <u>\$1000</u>
Louisiana-Pacific Corporation	Samoa, CA	680	Medium	8,000
Simpson Paper Company	Fairhaven, CA	600	Medium	11,500
Weyerhaeuser Company	Cosmopolis, WA	400	Medium	9,000

\* Costs taken from news articles and information provided to EPA by the companies.

### Operating Costs

Chemical savings associated with oxygen delignification are proportional to lignin reduction.<sup>31</sup> Oxygen is the least expensive chemical among the oxidizing agents used for the bleaching of pulps. In addition, the production of oxygen requires one eighth the energy to make the chemically equivalent amount of chlorine.<sup>31</sup>

Several references concur that when compared to a conventional sequence, a kraft softwood bleach line containing an oxygen delignification stage would consume approximately the same amount of energy (steam and electricity), consume less chemicals, and decrease wastewater treatment costs.<sup>5,11,57,76</sup> Specifically, one source reported operating cost savings of \$16/ton of softwood pulp at 90 ISO brightness using high consistency OD and a bleaching sequence of OC/DEoD vs. conventional C/DEDED bleaching.<sup>57</sup> Another source reported annual cost savings of \$8.55/ton for softwood and \$3.16/ton for hardwood.<sup>191</sup> These figures agree fairly well with a third source which related cost savings of \$9 an \$4/metric ton of softwood and hardwood pulp, respectively.<sup>8</sup>

After depreciating capital cost and incorporating operating and treatment costs savings, one source reports that the use of oxygen bleaching in both an existing and a new plant results in a lower cost per ton of pulp.<sup>76</sup> Using a installed capital cost of \$17 million for a 1000 ton/day facility and a operational cost savings of \$9/ton results in a return on equity of around seven years.

**References:**

3, 4, 5, 8, 10, 11, 14, 15, 21, 22, 23, 29, 31, 33, 36, 38, 40, 43, 49, 55, 56, 57, 59, 60, 61, 63, 64, 65, 66, 69, 70, 72, 73, 74, 75, 76, 80, 83, 85, 90, 91, 92, 93, 95, 96, 98, 109, 112, 116, 120, 121, 132, 133, 140, 142, 144, 149, 155, 157, 158, 160, 165, 166, 168, 169, 170, 171, 173, 176, 177, 178, 184, 191, 196, 197

CERTIFICATE OF SERVICE

The undersigned hereby certifies that he is an intern of the Western Environmental Law Clinic and is a person of such age and discretion as to be competent to serve papers.

That on July 15, 1992, he served NCAP/CRU'S MEMORANDUM IN OPPOSITION TO THE PETITIONS BY JAMES RIVER, BOISE CASCADE AND THE CITY OF ST. HELENS FOR RECONSIDERATION OR REHEARING to:

William W. Wessinger, Chair  
Oregon EQC  
121 S.W. Salmon, Suite 1100  
Portland, OR 97204

Emery N. Castle, Vice Chair  
Oregon EQC  
Oregon State University  
307 Ballard Hall  
Corvallis, OR 97331

Carol W. Whipple, Member  
Oregon EQC  
21755 Highway 138 West  
Elkton, OR 97436

Henry Lorenzon, Member  
Oregon EQC  
Corey, Buler, Rew, et al.  
P.O. Box 218  
Pendleton, OR 97801

Linda McMahan, Member  
Oregon EQC  
Berry Botanic Garden  
11505 S.W. Summerville Avenue  
Portland, OR 97219

Fred Hansen, Director  
Oregon DEQ  
811 S.W. Sixth Ave., 6th Floor

The Honorable Arno H. Denecke  
3890 Dakota Road S.E.  
Salem, OR 97302

John W. Gould  
Richard H. Williams  
Lane Powell Spears Lubersky  
520 S.W. Yamhill Street, #800  
Portland, OR 97204

Larry Edelman  
Assistant Attorney General  
Oregon Department of Justice  
1515 S.W. Fifth Avenue, #410  
Portland, OR 97201

Lawrence Knudson  
Assistant Attorney General  
Oregon Department of Justice  
1515 S.W. Fifth Avenue, #410  
Portland, OR 97201

Peter M. Linden  
City Attorney  
City of St. Helens  
P.O. Box 278  
St. Helens, OR 97051

Lydia Taylor  
Oregon DEQ  
811 S.W. Sixth Avenue  
Portland, OR 97204

Jay T. Waldron  
David F. Bartz, Jr.  
Schwabe, Williamson & Wyatt  
1600-1950 Pacwest Center  
1211 S.W. Fifth Avenue  
Portland, OR 97204

Linda Williams  
1744 N.E. Clackamas Street  
Portland, OR 97232

Michael Campbell  
Stoel, Rives, et al.  
900 S.W. 5th Ave., #2300  
Portland, OR 97204

Richard Baxendale  
506 National Building  
1008 Western Ave.  
Seattle, WA 98104

Brian J. King  
Boise Cascade Corporation  
One Jefferson Square  
P.O. Box 50  
Boise, Idaho 83728

  
Mark Chernaik

**EXHIBIT C to  
Boise Cascade Corporation's Petition for  
Reconsideration or Rehearing**

1                   BEFORE THE ENVIRONMENTAL QUALITY COMMISSION  
 2                                   OF THE STATE OF OREGON

3   In the matter of National            )  
 4   Pollutant Discharge Elimination    )  
 5   System Waste Discharge Permit      ) BOISE CASCADE CORPORATION'S  
 6   No. 100715, issued to the City      ) PETITION FOR RECONSIDERATION  
 7   of St. Helens on November 14,      ) OR REHEARING  
 8   1990,                                    )  
 9    )  
 10                   and                    )  
 11    )  
 12   In the matter of National            )  
 13   Pollutant Discharge Elimination    )  
 14   System Waste Discharge Permit      )  
 15   No. 100716, issued to James         )  
 16   River II, Inc., on November 14,     )  
 17   1990.                                    )

12                   Boise Cascade Corporation petitions for  
 13   reconsideration or rehearing of the Commission's Findings of  
 14   Fact and Conclusions of Law and Final Order, dated April 16,  
 15   1992 ("Final Order"). Boise Cascade submits that  
 16   reconsideration or rehearing is warranted by recent regulatory  
 17   developments and by new technical information concerning the  
 18   control of discharges of adsorbable organic halogens ("AOX").  
 19   The specific grounds for reconsideration or rehearing are set  
 20   forth below.

22   I.    INTRODUCTION

23                   The Commission determined in its Final Order that it  
 24   was not required to impose "best available technology  
 25   economically achievable" ("BAT") limits on discharges of AOX  
 26   but that it had the discretion to do so. (Final Order at 14.)

1 In this instance, although the Commission found no evidence  
2 that AOX discharges from Boise Cascade's St. Helens Mill or  
3 from James River II, Inc.'s Wauna Mill were causing instream  
4 toxicity (Final Order at 12), the Commission nonetheless  
5 concluded that the permits should contain AOX limits (Final  
6 Order at 16).

7           Boise Cascade strongly believes that the evidence  
8 shows that AOX discharges from the St. Helens Mill pose no  
9 environmental threat. Furthermore, Boise Cascade has argued  
10 that BAT AOX effluent limits may not be imposed on the  
11 St. Helens Mill and that there is, in any event, insufficient  
12 evidence in the record to support such limits. Boise Cascade  
13 respectfully adheres to these positions and asks that the  
14 Commission reconsider its Final Order.

15           The principal purpose of this petition, however, is  
16 not to reiterate these positions, with which the Commission is  
17 familiar.<sup>1</sup> Boise Cascade understands the Commission's concern  
18 that discharges of AOX, or at least some of its constituents,  
19 may cause environmental harm. The principal purpose of this  
20 petition is to suggest a solution that will address the  
21 Commission's concern without imposing rigid AOX permit limits  
22

---

23           <sup>1</sup> As a matter of form, and in order to prevent any  
24 misunderstanding, Boise Cascade wishes to make clear that, by  
25 filing this petition, it does not waive any ground for judicial  
26 review of the Commission's Final Order, including those aspects  
of the Final Order concerning permit limits for TCDD. Of  
course, the adoption of the solution proposed herein would moot  
Boise Cascade's AOX arguments.



1 that the St. Helens Mill will be able to approach but may not  
2 be able to attain. This solution is supported by recent  
3 regulatory developments and new technical information, which  
4 warrant the Commission's reconsideration or rehearing of this  
5 matter.

6  
7 **II. NEW TECHNICAL INFORMATION**

8 Boise Cascade is in the process of installing, at a  
9 cost of approximately \$37 million, a chlorine dioxide generator  
10 and associated equipment at its St. Helens Mill. This  
11 equipment, which will be installed by July 1, 1993, will enable  
12 Boise Cascade to substitute chlorine dioxide for elemental  
13 chlorine in the mill's first bleaching stage.

14 Following the hearing in this proceeding, a study of  
15 the effects of full-scale chlorine dioxide substitution at the  
16 Simpson Tacoma Kraft Company's bleached kraft pulp mill at  
17 Tacoma, Washington, was published in the Proceedings of the  
18 1992 TAPPI Environmental Conference (hereinafter the "Simpson  
19 Study"). A copy of this publication is attached as Exhibit A.  
20 The Simpson Study demonstrates the substantial reductions in  
21 discharges of both AOX and dioxins that can be achieved by  
22 substituting chlorine dioxide for elemental chlorine in the  
23 bleaching process. These conclusions of the Simpson Study have  
24 been further supported by recent tests of chlorine dioxide  
25 substitution at Boise Cascade's Wallula, Washington, bleached  
26

1 kraft mill and by the results of full-scale tests of chlorine  
2 dioxide substitution at other U.S. bleached kraft mills.

3           These recent studies strongly suggest that the use of  
4 chlorine dioxide substitution will produce substantial  
5 reductions in discharges of both AOX and dioxins from the  
6 St. Helens Mill. Furthermore, these reductions will enable the  
7 mill to approach the AOX permit limit of an annual average of  
8 1.5 kilograms per air dried metric ton of pulp ("kg/ADMT").

9           But these studies also show that no one can say with  
10 any reasonable certainty what specific level of discharge can  
11 actually be achieved at any given mill until the equipment for  
12 substituting chlorine dioxide is installed and the lengthy  
13 process of fine-tuning the bleaching process to accommodate the  
14 substitution is completed. Each bleached kraft pulp mill,  
15 including the St. Helens Mill, has its own unique equipment,  
16 raw materials, processes, and product markets. While studies  
17 of the degree of AOX and dioxin reduction that can be achieved  
18 at other bleached kraft mills show the efficacy of chlorine  
19 dioxide substitution, the results from these other mills cannot  
20 demonstrate the precise extent to which AOX and dioxin  
21 discharges can be reduced at the St. Helens Mill.

22           The permit issued for the City of St. Helens  
23 recognizes the difficulty of predicting the precise extent of  
24 the reduction in AOX discharges that the St. Helens Mill will  
25 be able to achieve. The permit attempts to address this  
26 difficulty by including a reopener clause that allows the

1 permit's AOX limits to be reexamined if the mill installs a  
2 broad range of technologies, including both chlorine dioxide  
3 substitution and oxygen delignification, but nonetheless fails  
4 to achieve the limit.

5           These additional technologies, however, and oxygen  
6 delignification in particular, are each enormously expensive.  
7 Boise Cascade has estimated that oxygen delignification alone  
8 would cost approximately an additional \$40 million in capital  
9 expenditures. Yet, it is not clear that using a combination of  
10 these technologies would significantly reduce AOX discharges  
11 beyond the reductions that could be obtained through the use of  
12 chlorine dioxide substitution alone. Moreover, to the extent  
13 that using a combination of these technologies produced any  
14 additional reductions in discharges of AOX, evidence previously  
15 introduced shows that the environmental benefit of any such  
16 additional reduction would be negligible.

17           Furthermore, because the permit reopener clause  
18 provides that the AOX limits will be reexamined only if the  
19 limits cannot be achieved, Boise Cascade and the City of St.  
20 Helens may be required to violate the permit before any  
21 reexamination results in less stringent permit limits. This  
22 would expose the City and Boise Cascade to fines, citizens'  
23 suits, and criminal penalties.

24  
25 **III. NEW REGULATORY DEVELOPMENTS**  
26

1           In May 1991, the Washington Department of Ecology  
2 issued permits to Washington's bleached kraft mills that  
3 contained AOX limits of 1.5 kg/ADMT as an annual average.  
4 These AOX limits have recently been invalidated by separate  
5 actions of the Washington Pollution Control Hearings Board  
6 ("PCHB") and the Washington Legislature.

7           On April 2, 1992, the PCHB unanimously ruled that  
8 Washington's 1.5 kg/ADMT AOX limits lacked a sufficient  
9 evidentiary basis because the limits had not been established  
10 after a case-by-case determination of the ability of each of  
11 the mills to meet the limits, as required by the Clean Water  
12 Act. Accordingly, the PCHB concluded that the AOX limits were  
13 invalid and deleted them from the permits. A copy of the  
14 PCHB's order is attached as Exhibit B.

15           On March 12, 1992, the Washington Legislature enacted  
16 legislation, which takes effect this June, that addresses  
17 discharges of chlorinated organics from pulp and paper mills.  
18 The legislation has the effect of precluding the Department of  
19 Ecology from issuing permits that limit discharges of AOX from  
20 pulp and paper mills until at least 1995. The purpose of the  
21 legislation is to allow each of the mills time to conduct  
22 engineering studies on the cost and feasibility of reducing  
23 discharges of AOX. A copy of the legislation is attached as  
24 Exhibit C.

25           Thus, if the AOX limits remain in the Oregon permits,  
26 the St. Helens and Wauna Mills, and perhaps the Potlatch Mill

1 in Idaho, will likely be the only pulp and paper mills in the  
2 nation that will be subject to AOX effluent limits for at least  
3 the next several years. Given the enormous cost of controlling  
4 discharges of AOX, the AOX limits will place the Oregon mills  
5 at a competitive disadvantage, not only with respect to mills  
6 in other parts of the country, but also with respect to mills  
7 in Washington. Moreover, given the continuing uncertainty as  
8 to whether there are any adverse health or environmental  
9 effects associated with AOX, this competitive disadvantage may  
10 not be counterbalanced by any environmental benefits.

11  
12 IV. A PROPOSED SOLUTION

13 Boise Cascade submits that there is a better solution  
14 to this problem, one that would address both the Commission's  
15 concern that AOX discharges should be substantially and quickly  
16 reduced and Boise Cascade's concern that the AOX limits may not  
17 be achievable at the St. Helens Mill. Boise Cascade proposes  
18 that the permit be revised as follows:

19 1. Boise Cascade would be required to install equipment  
20 capable of achieving 70 to 100 percent chlorine dioxide  
21 substitution for the first bleaching stage. The installation  
22 would be required no later than July 1, 1993.

23 2. Upon installation of the chlorine dioxide  
24 substitution equipment, and to the extent consistent with  
25 optimizing product quality, Boise Cascade would be required to  
26 operate the equipment and its bleaching process with the goal

1 of reducing AOX discharges from the St. Helens Mill to  
2 1.5 kg/ADMT as an annual average, following secondary  
3 treatment.

4 3. In addition, upon installation of the chlorine  
5 dioxide substitution equipment, and every six months  
6 thereafter, Boise Cascade would be required to submit to the  
7 Department a report that summarizes the progress toward meeting  
8 the discharge goal specified above, including data on AOX  
9 discharges, the percentage of chlorine dioxide substitution,  
10 and other relevant data.

11 4. The AOX limits and associated provisions would be  
12 deleted from the City of St. Helens' permit, and the City of  
13 St. Helens would not be required to include an AOX limit in any  
14 pretreatment permit issued to Boise Cascade. AOX monitoring  
15 and reporting requirements would remain.<sup>2</sup>

16 This solution would quickly produce substantial  
17 reductions in AOX, beginning with the installation of the  
18 chlorine dioxide substitution system no later than July 1,  
19 1993. Furthermore, this solution would not preclude further  
20 reductions in AOX discharges as technological advances occur in  
21 the future. Boise Cascade notes that EPA is under a court  
22 order to issue national BAT and pretreatment guidelines for  
23

---

24  
25 <sup>2</sup> By proposing this solution, Boise Cascade does not  
26 concede that the Commission may require the installation of  
specific control technologies without the consent of the person  
subject to the requirements.

1 bleached kraft pulp and paper mills by September 30, 1995. See  
2 57 Fed. Reg. 17405 (Apr. 27, 1992). EPA is studying whether or  
3 not limits on chlorinated organic compounds should be included  
4 and, if so, what regulatory parameters, such as AOX, would be  
5 appropriate. The City of St. Helens' permit expires in  
6 November 1995. At that time, the Department and the Commission  
7 will be able to assess the progress that Boise Cascade has made  
8 toward achieving the goal of 1.5 kg/ADMT AOX and will have the  
9 benefit of EPA's determination of an appropriate strategy for  
10 regulating discharges of chlorinated organic compounds from  
11 pulp mills nationwide.

#### 12 13 V. CONCLUSION

14 New studies show that requiring Boise Cascade to use  
15 chlorine dioxide substitution with the goal of reducing  
16 discharges of AOX to an annual average of 1.5 kg/ADMT would  
17 ensure that AOX discharges would be reduced to a level  
18 approaching, if not meeting, this level. On the other hand,  
19 retaining a permit limit of 1.5 kg/ADMT would not result in any  
20 substantial further reductions in discharges of AOX, or  
21 environmental benefits. Thus, by imposing a permit limit for  
22 AOX, the Commission would obtain little or no environmental  
23 benefit but may require Boise Cascade to install enormously  
24 expensive control technology, which may not prove necessary.

25 Boise Cascade submits that the solution that it has  
26 proposed will (1) ensure that the Commission's concerns

1 regarding AOX discharges are addressed and addressed rapidly  
2 but (2) do so in a manner that will not require economically  
3 and environmentally wasteful expenditures that will place the  
4 St. Helens Mill at a competitive disadvantage with mills in  
5 Washington and other parts of the nation. Accordingly, Boise  
6 Cascade respectfully requests that the Commission grant this  
7 petition for reconsideration or rehearing and revise the AOX  
8 permit conditions for the City of St. Helens' permit in the  
9 manner described above.

10 DATED: June 12, 1992.

11 STOEL RIVES BOLEY JONES & GREY

12  
13 

14 Michael R. Campbell  
15 Attorneys for  
16 Boise Cascade Corporation  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26



1 CERTIFICATE OF FILING AND SERVICE

2 I hereby certify that I filed the original of the  
3 foregoing BOISE CASCADE CORPORATION'S PETITION FOR  
4 RECONSIDERATION OR REHEARING by causing it to be hand delivered  
5 to the Office of the Director of the Department of  
6 Environmental Quality, 811 S.W. Sixth Avenue, Portland, Oregon  
7 97204, on June 12, 1992.

8 I further hereby certify that I served the foregoing  
9 BOISE CASCADE CORPORATION'S PETITION FOR RECONSIDERATION OR  
10 REHEARING on:

11 THE HONORABLE ARNO H. DENECKE  
12 3890 DAKOTA ROAD SE  
13 SALEM, OR 97302

14 JOHN E. BONINE  
15 WESTERN ENVIRONMENTAL LAW  
16 CLINIC  
17 SCHOOL OF LAW  
18 UNIVERSITY OF OREGON  
19 EUGENE, OR 97403

20 LARRY EDELMAN  
21 ASSISTANT ATTORNEY GENERAL  
22 OREGON DEPARTMENT OF JUSTICE  
23 1515 SW FIFTH AVE., SUITE 410  
24 PORTLAND, OR 97201

25 JOHN W. GOULD  
26 RICHARD H. WILLIAMS  
LANE POWELL SPEARS LUBERSKY  
520 SW YAMHILL ST., SUITE 800  
PORTLAND, OR 97204

LINDA K. WILLIAMS  
1744 NE CLACKAMAS STREET  
PORTLAND, OR 97232

WILLIAM W. WESSINGER, CHAIR  
ENVIRONMENTAL QUALITY  
COMMISSION  
121 SW SALMON, SUITE 1100  
PORTLAND, OR 97204

LARRY KNUDSEN  
ASSISTANT ATTORNEY GENERAL  
OREGON DEPARTMENT OF JUSTICE  
1515 SW FIFTH AVE., SUITE 410  
PORTLAND, OR 97201

PETER M. LINDEN  
CITY ATTORNEY  
CITY OF ST. HELENS  
PO BOX 278  
ST. HELENS, OR 97051

MR. RALPH A. BRADLEY  
BRADLEY & GORDON, P.C.  
296 E. FIFTH ST., SUITE 309  
EUGENE, OR 97401

LYDIA TAYLOR  
DEPARTMENT OF ENVIRONMENTAL  
QUALITY  
811 SW SIXTH AVENUE  
PORTLAND, OR 97204

1 JAY T. WALDRON  
DAVID F. BARTZ, JR.  
2 SCHWABE WILLIAMSON & WYATT  
1600-1950 PACWEST CENTER  
3 1211 SW FIFTH AVENUE  
PORTLAND, OR 97204

4 MR. FRED HANSEN, DIRECTOR  
5 DEPARTMENT OF ENVIRONMENTAL  
QUALITY  
6 811 SW SIXTH AVE., 6TH FLOOR  
PORTLAND, OR 97204

7 EMERY N. CASTLE, VICE CHAIR  
8 ENVIRONMENTAL QUALITY  
COMMISSION  
9 OREGON STATE UNIVERSITY  
307 BALLARD HALL  
10 CORVALLIS, OR 97331

LINDA MCMAHAN  
BERRY BOTANIC GARDEN  
11505 SW SUMMERVILLE AVE.  
PORTLAND, OR 97219

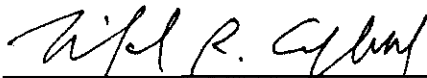
HENRY LORENZEN, MEMBER  
ENVIRONMENTAL QUALITY  
COMMISSION  
COREY, BYLER, REW, ET AL.  
PO BOX 218  
PENDLETON, OR 97801

CAROL A. WHIPPLE, MEMBER  
ENVIRONMENTAL QUALITY  
COMMISSION  
21755 HIGHWAY 138 WEST  
ELKTON, OR 97436

11 by mailing by first-class mail to those persons a true a  
12 correct copy thereof, placed in a sealed envelope addressed to  
13 them at the addresses set forth, and deposited in the United  
14 States Post Office at Portland, Oregon, on June 12, 1992, with  
15 the postage prepaid.

16 DATED: June 12, 1992.

17 STOEL RIVES BOLEY JONES & GREY

18  
19   
20 \_\_\_\_\_  
Michael R. Campbell  
21 Attorneys for  
Boise Cascade Corporation

**EXHIBIT A to  
Boise Cascade Corporation's Petition for  
Reconsideration or Rehearing**

## SIMPSON TACOMA KRAFT COMPANY OPERATES DIOXIN FREE WITH HIGH % $\text{ClO}_2$ SUBSTITUTION

Don Johnson  
Production Manager  
Simpson Tacoma Kraft Co.  
Tacoma, WA

Stacie Hashimoto  
Process Engineering Supt.  
Simpson Tacoma Kraft Co.  
Tacoma, WA

Mark Minday  
Sr. Process Engineer  
Eka Nobel Inc.  
Marietta, GA

### ABSTRACT

Simpson Tacoma Kraft Company is located on Puget Sound near Tacoma, Washington. This is an environmentally sensitive area for both air and water emissions. Also, Simpson exports market pulp to customers which require nondetectable dioxins in the pulp. With both environmental and market constraints, the mill pursued replacing molecular chlorine ( $\text{Cl}_2$ ) with chlorine dioxide ( $\text{ClO}_2$ ) in the first bleach stage of a three stage bleach plant, DC-EO-D, to reduce the formation of dioxins (TCDD/Fs) and chlorinated organics. Various levels of  $\text{ClO}_2$  substitution were tried, ranging from 15% to 100% substitution.

At 85%  $\text{ClO}_2$  substitution, the mill was able to produce dioxin (TCDD/F) free fully bleached market pulp with improved effluent quality. The TCDD/Fs were essentially nondetectable in the bleach plant effluents, while the amount of AOX in the final effluent, after secondary treatment, was less than 1.5 kg/tp. The mill has made 100%  $\text{ClO}_2$  substitution production runs or  $\text{Cl}_2$  free runs which resulted in an AOX of 0.6 kg/tp after secondary treatment. Hydrogen peroxide was used during some runs in the EO stage, which improved the stability of the bleaching operation and was necessary for achieving 87-88% GE brightness at 100% substitution.

### KEYWORDS

Chlorine dioxide, bleaching, effluents, AOX, chlorinated dioxins, chlorinated furans, pulp.

### INTRODUCTION

Simpson Tacoma Kraft Company in Tacoma, Washington, has made large strides in recent years to improve product quality, while reducing the mill's environmental impact. In 1936, the mill started up the first continuous bleach plant in the U.S., C-C<sub>1</sub>-E-H-H, producing 180 TPD of bleached kraft pulp. In the 1980's, the bleach plant was modified to a C-EO-H-H bleaching sequence and changed from calcium to sodium based hypochlorite. This sequence produced a pulp exhibiting low strength, limited brightness (80% GE), and excessive brightness reversion characteristics.

In 1988, Simpson installed a short sequence bleach plant, DC-EO-D, with the following objectives: increase bleached pulp strength by 40%, raise pulp brightness to 85% GE, reduce brightness reversion, increase bleached pulp production to 450 ADMT/day (500 ADMT/day, max.), decrease mill water use by 1 million gal./day, and significantly reduce emissions of chloroform and chlorinated organics.

In 1990, Simpson took another step to demonstrate its commitment to reducing the environmental liability of the Tacoma mill by performing high  $\text{ClO}_2$  substitution trials in May and June. This led to the current mode of operation - 85% and 100%  $\text{ClO}_2$  substitution in the first bleach stage.

### MILL DESCRIPTION

Simpson Tacoma Kraft Company is located adjacent to downtown Tacoma, 30 miles south of Seattle on Commencement Bay in the Puget Sound. The company has invested \$5 million to clean the sludge accumulation around the mill from its 1929-era plant and create a suitable habitat for salmon migration and other local wildlife. In addition, the mill outfall has been extended into Puget Sound. Overall, the mill is in a sensitive location for air and water emissions because of growth in the metropolitan Seattle-Tacoma area over the past 50 years.

Simpson has three fiber lines with a no. 1 line utilizing 6 batch digesters, producing 410 ADMT/day of unbleached pulp, while the no. 2 and no. 3 lines each use Kamyr digesters and produce a total of 860 ADMT/day of unbleached pulp. The wood furnish for all pulping lines is typically 50% coastal Douglas fir and 50% coastal western hemlock. The product line includes mottled white and natural kraft linerboard from the larger machine (242" wide trim, Beloit), while the smaller machine (162" wide trim, P&J) produces unbleached and bleached grades ranging from 35 lb. grocery sack to 42 lb. linerboard and various grades and weights in between. Approximately 815 ADMT/day of paper products are made on the two paper machines, while about 270 ADMT/day of fully bleached and natural market pulp are produced on two pulp machines.

The effluent treatment system includes a 225' clarifier for primary treatment and a UNOX activated sludge system for secondary treatment. This uses molecular oxygen, which is supplied via an 80 ton oxygen generation plant. Sludge from primary and secondary treatment is burned in a hog fuel boiler to produce process steam.

The remaining mill description focuses on the no. 1 fiber line, which contains the short sequence bleach plant. Following the six batch digesters are a new screen room and a new brownstock washer, a Black Clawson Chemi-Washer™. This equipment started up in January of 1991. Prior to this, an ancient brownstock washer line and screen room were utilized, which gave both high and variable amounts of black liquor carryover. All the data for this article was taken while the old washer line was in operation.

After the brownstock is washed and screened, it is transferred to a 250 ton high density storage chest. From there the stock is diluted with filtrate from the DC stage to 3.5 - 5% consistency and pumped to the consistency chest (see Figure 1). Pulp from this chest is further consistency controlled with trim dilution before entering the first of two high-shear mixers. The time delay between the two mixers for sequential addition of  $\text{ClO}_2$  and  $\text{Cl}_2$  is 30 seconds. Next, the pulp is pumped to the upflow chlorination tower for 30-40 minutes of retention time. This tower discharges into a launder ring that feeds a Beloit-Rauma rotary drum Pro-feed pressure washer (two stage).

Caustic is added to the pulp as it discharges from the chlorination washer-repulper into the standpipe of a medium consistency (MC) pump. Steam is added to the standpipe for temperature control. If hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) is used, it is mixed with the pulp through the MC pump. The pump is followed by a high-shear mixer where oxygen is mixed with the pulp before entering the upflow leg of the extraction tower. After 1.5 hours in the upflow-downflow tower, the medium consistency pulp is diluted to 3.5% consistency and pumped to another two stage Pro-feed washer.

Caustic is then added to the pulp as it discharges the washer, and enters the MC pump standpipe where steam is injected to heat the stock. The MC pump feeds another high-shear mixer, where  $\text{ClO}_2$  is mixed with the pulp. This pulp is sent to D stage upflow-downflow tower, having 4 hours of retention time. Subsequently, the pulp is diluted to 3.5% consistency and sent to the D stage washer, a single stage Pro-feed washer. Sulfur dioxide is added to control  $\text{ClO}_2$  residual in the stock feeding this washer. Pulp from this washer is sent to a 250 ton high density storage chest for use on the paper or pulp machines. For a more detailed description of the bleach plant, refer to Klein's article (1).

## MILL EXPERIENCE

It has been well documented that replacing molecular chlorine ( $\text{Cl}_2$ ) with  $\text{ClO}_2$  in the first bleach stage (50%+) significantly reduces: AOX (adsorbable organic halogens), 2,3,7,8 tetrachloro - dibenzo - p - dioxins and furans (TCDD/Fs), and chlorinated phenolic compounds (2 - 6). There are several basic approaches to reducing the amount and type of chlorinated organics formed in the bleach plant (7). Most involve a method for lowering the use of molecular  $\text{Cl}_2$ . These include: extended delignification, oxygen delignification, improved brownstock washing, decreased  $\text{Cl}_2$  charge, increased  $\text{ClO}_2$  substitution, split  $\text{Cl}_2$  addition, improved process control, and optimized process conditions (pH, temperature, and % consistency).

Simpson approached their goal of reducing chlorinated organics by two means:

- (1) decrease the molecular chlorine by using high  $\text{ClO}_2$  substitution, and
- (2) improve brownstock washing by replacing the old, unpredictable washer line with a state-of-the-art washing system.

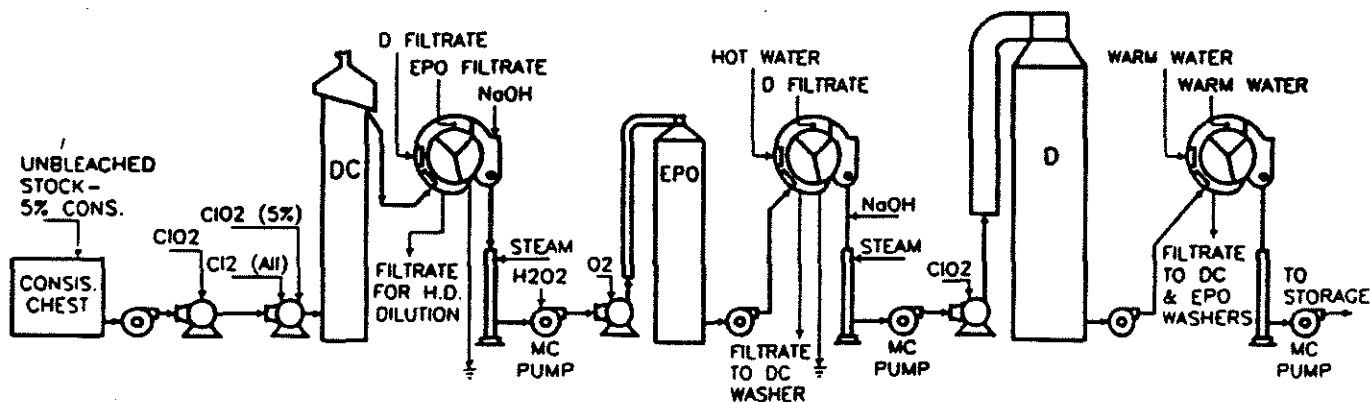


FIGURE 1 - SIMPSON TACOMA BLEACH PLANT FLOW DIAGRAM

Item 2, was accomplished by putting in a Chemi-Washer™, which yields a soda loss of less than 5 kg Na<sub>2</sub>SO<sub>4</sub>/tp. The effect of improved washing will not be shown in this article, since all of the data was taken with the old washer line in operation. Extended delignification and oxygen delignification were not considered due to their significant capital costs and the effect on recovery capacity. Thus, the focus of this work was on reducing the use of molecular chlorine via high ClO<sub>2</sub> substitution which lowered key chlorinated organics in the effluent and in the pulp. Even though much TCDD and TCDF data was collected, the "yardsticks" used to measure a reduction in chlorinated organics were:

- (1) AOX in the effluent (after secondary treatment) and,
- (2) TCDD/F in the bleach plant effluents and in the bleached pulp off the D-washer.

The AOX measurements taken were performed on the decanted liquid only according to Method 506 of Standard Methods for the Examination of Water and Wastewater, 16th Edition (8). AOX is understood as the gross indicator of the chlorinated organic content of wastewater. Thus, AOX results alone do not measure the environmental significance of any reductions caused by ClO<sub>2</sub> substitution. However, measuring the effect ClO<sub>2</sub> substitution has upon reducing specific chlorinated compounds, which are considered toxic or possibly carcinogenic (e.g., TCDD/F), is a viable way to track success. Once a relationship between AOX and key chlorinated compounds is developed

for a given mill, then the relatively simple test, AOX, can be used to measure the true impact of a given process modification.

Before discussing the mill results, it is important to define terms which are used in this report.

1. Charge Factor (CF) =  $\frac{\text{Total act. chlorine in kg/tp}}{\text{brownstock kappa no.}}$  for DC Stage
2. Molecular Chlorine =  $\frac{\text{wt. \% Cl}_2 \text{ applied in DC Stage}}{\text{Multiple}}$  brownstock kappa no.
3. Elemental Chlorine (Cl) = Cl<sub>2</sub> +  $\frac{\text{ClO}_2 \text{ (Act. Cl}_2\text{)}}{5}$  (kg/tp) in DC Stage
4. Percentage of D (% D) = the percentage of total active chlorine in the DC stage which is ClO<sub>2</sub>
5. Estimate of AOX = 0.1 (Elemental Chlorine) (kg/tp) formed (9)

#### Various Levels of % D Without H<sub>2</sub>O<sub>2</sub>

The data for this portion of the work was taken from April 1989 to May 1990, and covered a full range of % ClO<sub>2</sub> substitution, 15 to 100% D. No H<sub>2</sub>O<sub>2</sub> was used in the EO stage during this portion of the mill trials. Tables 1, 2, 3, and 4 show the environmental data, primary operating

**TABLE 1 - AOX & 2,3,7,8-TCDD/F RESULTS for EACH LEVEL of ClO<sub>2</sub> SUBSTITUTION**

BLEACHING SEQUENCE	AOX kg per ADMT (bl.) [1]	DIOXIN DATA (2,3,7,8-TCDD)							FURAN DATA (2,3,7,8-TCDF)						
		B.P. ACID SEWER (ppg)	B.P. ALKAL SEWER (ppg)	D WASHER PULP (ppt)	PULP MACH. (ppt)	PAPER MACH. (ppt)	SEC. TREAT. (ppg) [2]	SLUDGE (ppt) [3]	B.P. ACID SEWER (ppg)	B.P. ALKAL SEWER (ppg)	D WASHER PULP (ppt)	PULP MACH. (ppt)	PAPER MACH. (ppt)	SEC. TREAT. (ppg) [2]	SLUDGE (ppt) [3]
<b>WITHOUT H<sub>2</sub>O<sub>2</sub></b>															
(C85+D15)(EO)D	5.20	77.0	450.0	26.0	-	-	-	-	780.0	4,200	318.0	-	-	-	-
(D30C70)(EO)D	3.50	40.0	400.0	14.0	-	-	-	-	270.0	1,600	53.0	-	-	-	-
(D40C60)(EO)D	3.80	48.0	490.0	13.0	-	-	13.0	-	160.0	1,300	42.0	-	-	51.0	-
(D50C50)(EO)D	2.90	45.5	300.0	8.05	12.0	11.0	13.0	110.0	131.0	675.0	21.5	41.0	40.0	41.5	150.0
(D75C25)(EO)D	2.30	17.4	41.5	*2.05	0.49	0.67	ND	19.7	*8.6	*26.0	*1.06	0.60	1.18	11.9	55.3
D100(EO)D	0.60	ND	ND	ND	-	ND	*7.9	19.5	ND	5.70	ND	-	0.25	17.0	71.0
<b>WITH H<sub>2</sub>O<sub>2</sub></b>															
(D75C25)(EPO)D	2.26	14.1	28.0	*1.20	-	*2.3	*9.0	19.5	16.5	29.5	3.9	-	*14.2	*28.0	59.5
(D85C15)(EPO)D	1.26	*13.0	ND	ND	ND	ND	ND	4.6	ND	*8.2	ND	ND	1.55	16.0	34.0
D100(EPO)D	0.61	ND	ND	ND	ND	ND	6.0	7.0	*6.8	ND	ND	ND	ND	25.7	38.1

[1] - In effluent after secondary treatment. AOX measurement was performed on decantant only according to Standard Methods for the Examination of Water and Wastewater, 16th Edition, Method 506 "Organic Halogen (Total Adsorption - Pyrolysis - Titrimetric Method (Testative)) - Microcolumn (4a) Method.

[2] - In effluent after secondary treatment.

[3] - Primary & secondary sludge burned in a hog fuel boiler; estimated at 30 TPD & at 40% solids.

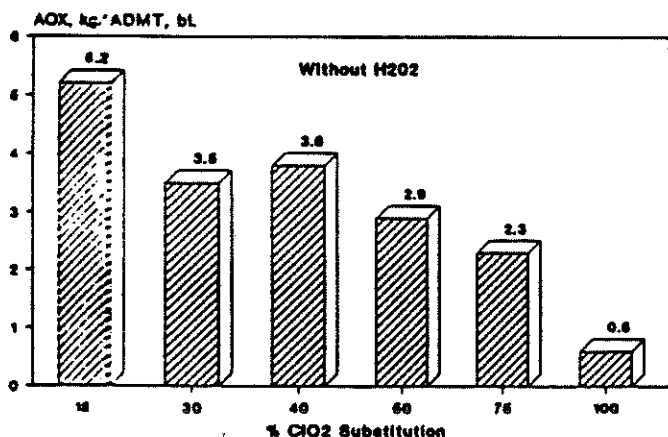
\* - At least one of the collected samples was determined to be nondetectable (ND).

conditions, bleaching costs, and pulp quality results for the different levels of % D. The top portion of each of these tables lists the results of ClO<sub>2</sub> substitution when no H<sub>2</sub>O<sub>2</sub> was used, while the lower portion of each table lists the % D results when H<sub>2</sub>O<sub>2</sub> was used. Table 2 shows the number of days of operational data which were averaged and used in the tables and in the figures. The environmental data taken for each level of % D did not extend the whole period in which the operational data was taken. There were only 1 to 3 sets of environmental data per level of % D studied. The reference mode of operation for this work is 15% D.

The convention used for expressing the addition and amounts of ClO<sub>2</sub> and Cl<sub>2</sub> to the first bleach stage generally follows the TAPPI recommended practice (TIS 0606-21). Above 15% D, ClO<sub>2</sub> was added 30 seconds prior to Cl<sub>2</sub>, while at 15% D, ClO<sub>2</sub> and Cl<sub>2</sub> were mixed simultaneously with the pulp. For the sequential addition (DC), 5% of the ClO<sub>2</sub> demand was mixed with the Cl<sub>2</sub> in the second mixer for pulp viscosity protection (see Figure 1). The optical/residual sensor is located 20 seconds downstream from this mixer.

Figures 2, 3, and 4 show the effect various levels of ClO<sub>2</sub> substitution have upon AOX in the effluent, after secondary treatment, and upon TCDD/F in the bleach plant effluents. Table 1 also contains this data. Figure 2 shows the large decrease in the mill's AOX as a result of substituting ClO<sub>2</sub> for Cl<sub>2</sub> gas in the DC stage. At 50% substitution the AOX dropped from 5.2 to 2.9 kg/ADMT, a 44% decrease. To fully replace Cl<sub>2</sub> with ClO<sub>2</sub>, the AOX was reduced by 88%, from 5.2 to 0.6 kg/ADMT.

Figure 2. Effect of % ClO<sub>2</sub> Substitution on AOX After Secondary Treatment



To further define the effect reduced AOX had upon potentially harmful chlorinated organic compounds in the bleach plant effluents, the acidic and alkaline effluents from the bleach plant were sampled and tested for TCDD/F concentrations (Figures 3 and 4, Table 1). As predicted from previous studies and confirmed during these mill trials (10):

- (1) The alkaline effluent contained 2 to 5 times the amount of TCDD/F than what was found in the acid effluent. This was true for all levels of substitution.
- (2) The furans (2,3,7,8-TCDF) were much more abundant, 2 to 10 times greater for 15 to 50% substitution, than the dioxins (2,3,7,8-TCDD). This was true for both the alkaline and acid effluents.

In Figures 3 and 4, no distinction was made between data taken with or without H<sub>2</sub>O<sub>2</sub> in the EO stage since the differences are indistinguishable. Dioxins (TCDD) were lowered by 90% in the alkaline effluent at 75% ClO<sub>2</sub> substitution (Figure 3). For furans (TCDF) the concentration in the alkaline effluent decreased by 62% when going from 15 to 30% ClO<sub>2</sub> substitution (Figure 4). For TCDD and TCDF in the bleach plant acid effluent the changes in the TCDD/F concentrations were not as dramatic as in the alkaline effluent. For both bleach plant effluents the dioxins and furans (TCDD/F) were essentially nondetectable at 85% D and above.

Figure 3. Dioxin Reduction in Bleach Plant Effluents with ClO<sub>2</sub> Substitution

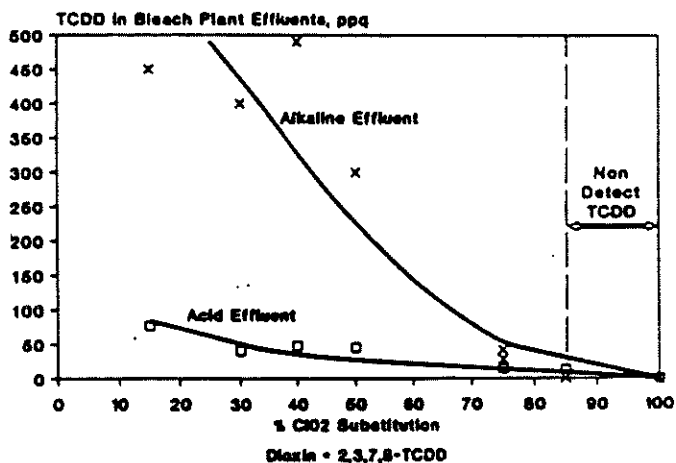
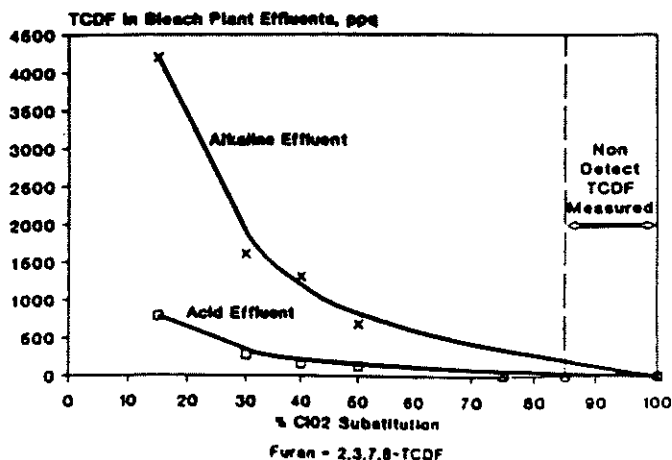
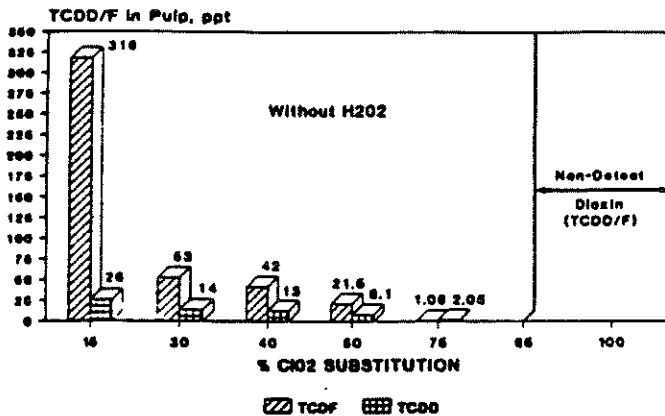


Figure 4. Furan Reduction in Bleach Plant Effluents with ClO<sub>2</sub> Substitution



DD/F was also measured in the pulp off the final D-asher (Figure 5). As was true with the bleach plant effluents, the TCDF concentrations were much greater in the pulp than the TCDD concentrations, especially for 15 to 50% D. At 75% D both TCDD/F were very low, 1-2 ppt, while they were nondetectable at 85% D and above. Therefore, the nondetectable TCDD/F zone for both the bleach plant effluents and the fully bleached pulp begins at the 85% ClO<sub>2</sub> substitution level.

Figure 5. Effect of % ClO<sub>2</sub> Substitution on TCDD/F in Bleached Pulp



The TCDD/F concentrations in fully bleached pulp, at different levels of ClO<sub>2</sub> substitution, were plotted against corresponding AOX data. Figure 6 shows the relationship for TCDD in pulp versus AOX. This figure shows a huge drop in TCDD between an AOX of 5 and 2.5 kg/ADMT. Dioxins were found nondetectable in the pulp when the measured AOX in the treated secondary effluent was 1.5 kg/ADMT or below. Figure 7 shows the same information as Figure 6 except it relates TCDF in pulp to AOX. The TCDF dropped off sharply at an AOX of about 3.6 kg/ADMT. Furans were also nondetectable at an AOX of 1.5 kg/ADMT.

Figure 6. Relationship Between 2,3,7,8-TCDD in Pulp & AOX in Effluent

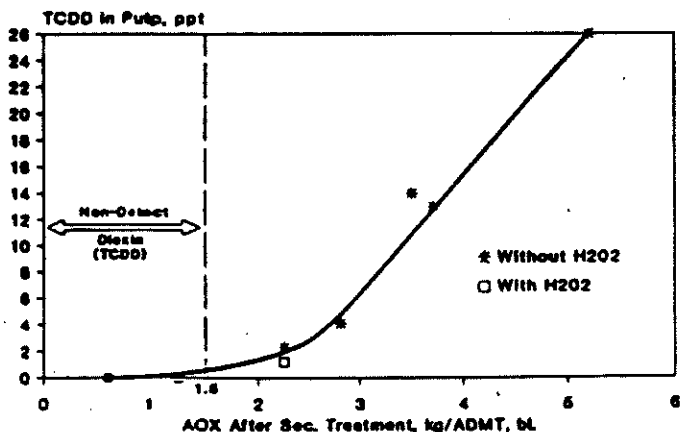
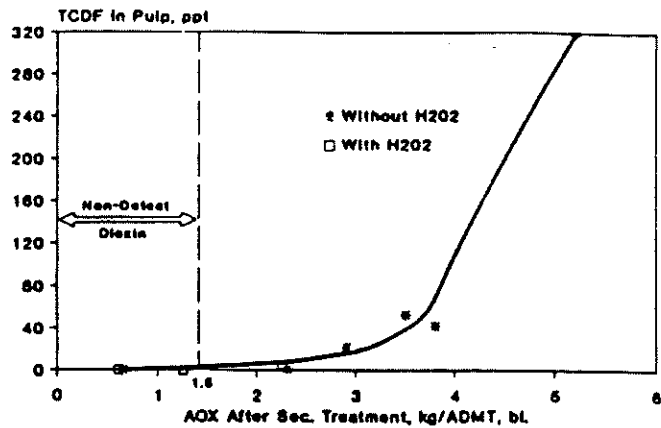
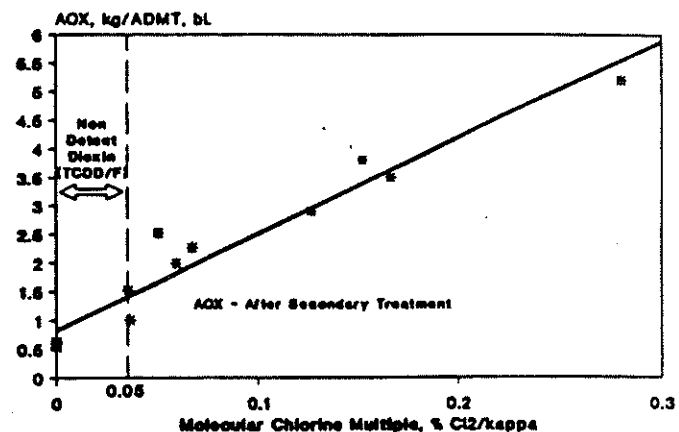


Figure 7. Relationship Between 2,3,7,8-TCDF in Pulp & AOX in Effluent



If this same information is viewed in terms of AOX versus molecular chlorine multiple (MCM), the nondetectable TCDD/F region for bleach plant effluent and bleached pulp is at 0.05 MCM and below. This corresponds to about 85% D without the use of H<sub>2</sub>O<sub>2</sub> (see Table 3 and Figure 8). Thus, the Tacoma mill must operate at 85% D or above to ensure a dioxin (TCDD/F) free operation.

Figure 8. Effect of Molecular Chlorine (Cl<sub>2</sub>) Applied on AOX

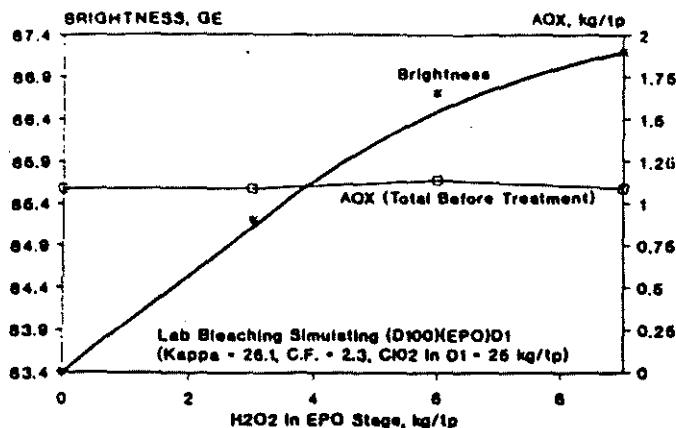


#### H<sub>2</sub>O<sub>2</sub> With High Levels of % D

After performing the 100% trial in May 1990, Simpson consulted with Eka Nobel Inc. in Atlanta to determine how to optimize their bleaching conditions for 100% D. In addition, Eka Nobel did lab work which closely simulated Simpson's bleaching conditions, both with and without H<sub>2</sub>O<sub>2</sub> in the EO stage. Figure 9 shows some basic results of this work. The H<sub>2</sub>O<sub>2</sub> charge was varied in the EO stage from 3.0 to 9.0 kg/tp while the chemical charges in the EO and D1 stages were kept constant. The final brightness increased as the H<sub>2</sub>O<sub>2</sub> charge increased, while the AOX stayed constant. This is due to more delignification and pulp brightening occurring with the H<sub>2</sub>O<sub>2</sub>.



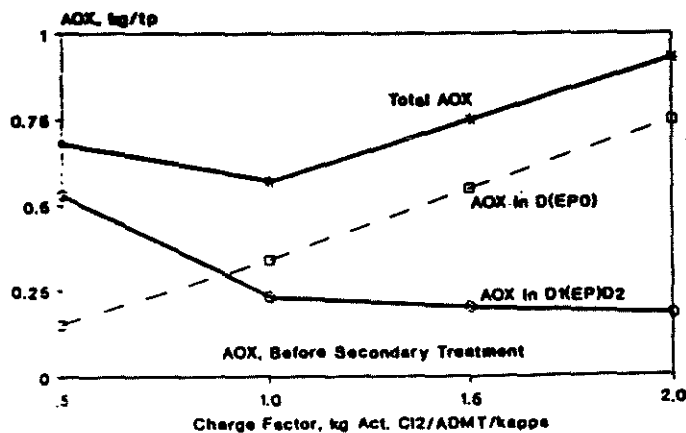
Figure 9. Final Brightness & AOX at Various H<sub>2</sub>O<sub>2</sub> Charges in EPO Stage



In June 1990, the mill started applying H<sub>2</sub>O<sub>2</sub> to the EO stage. Various high levels of % D (75, 85, & 100) were tried in conjunction with the new EPO stage from June 1990 to January 1991. In Table 1, the AOX looks the same for the 75% D with or without H<sub>2</sub>O<sub>2</sub>. The same is true for the 100% D case. The 75% D case without H<sub>2</sub>O<sub>2</sub> was higher in dioxins (TCDD/F) in bleach plant effluents and bleached pulp than when using H<sub>2</sub>O<sub>2</sub>. TCDD/Fs were nondetectable at 85% D and 100% D. With these results, the mill has decided to operate at 85% D with H<sub>2</sub>O<sub>2</sub> to ensure a dioxin free operation.

With the use of H<sub>2</sub>O<sub>2</sub> in the EPO stage the DC stage charge factor was lower than before or less active chlorine was applied (see Table 3). This also means less elemental chlorine (Cl) was applied, which should have resulted in less AOX formed (9). Basta, et al, have studied the use of H<sub>2</sub>O<sub>2</sub> in the EO stage to lower the charge factor (11,12). These results are shown in Figure 10. The minimal AOX measured was at a charge factor of 1.0. Although this was done on an oxygen prebleached pulp, in a D-(EO)-D-E-D bleaching sequence, the same principle holds true for any

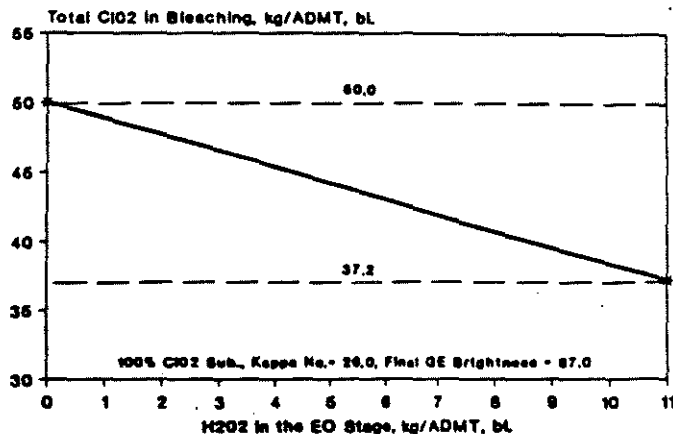
Figure 10. AOX Discharge as a Function of Charge Factor



bleach plant - lower elemental chlorine on the first stage results in lower AOX. To go to a lower charge factor with H<sub>2</sub>O<sub>2</sub> for equivalent brownstock and DC kappa numbers, more of the delignification shifts from the first stage to the EPO stage. Here a nonchlorine chemical picks up the additional delignification load, resulting in less chlorinated organic compounds formed.

The reasons why the lower charge factors (using H<sub>2</sub>O<sub>2</sub>) did not result in lower AOX are not fully understood. Optimization of the brownstock washer and other mill modifications are expected to resolve this apparent inconsistency. The most important contribution H<sub>2</sub>O<sub>2</sub> had on the 100% D runs was that it made it possible to achieve market pulp final brightness (87% GE). This was about one point higher in brightness than the 100% D trial without H<sub>2</sub>O<sub>2</sub>. It was also observed at 100% D runs that 1 kg of H<sub>2</sub>O<sub>2</sub> applied to the EPO stage displaced 1.2 kg of ClO<sub>2</sub> in the entire bleach plant. This is shown in Figure 11, which is corrected for variations in brownstock kappa number.

Figure 11. Effect of H<sub>2</sub>O<sub>2</sub> in the EO Stage on Total ClO<sub>2</sub> Used (D100 + D)

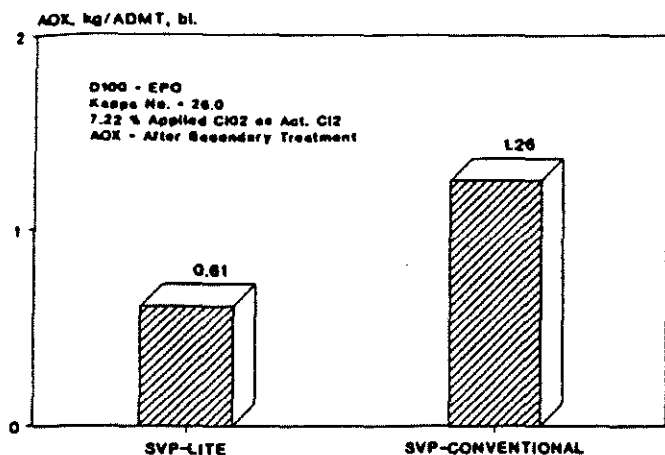


#### Impact of the ClO<sub>2</sub> Process Used

The ClO<sub>2</sub> process selected has an impact on the AOX generated from a bleach plant, especially for high ClO<sub>2</sub> substitution levels, where large quantities of ClO<sub>2</sub> are used in the first bleach stage. Simpson selected Eka Nobel's methanol based ClO<sub>2</sub> process, SVP-LITE™, over the conventional ClO<sub>2</sub> process which uses sodium chloride (i.e., SVP® or R-3). The SVP-LITE™ process contains essentially no Cl<sub>2</sub> in the ClO<sub>2</sub> solution, while the conventional process contains 1.9 gpl Cl<sub>2</sub> for a 10 gpl ClO<sub>2</sub> solution with an additional by-product Cl<sub>2</sub> of 0.42 kg per kg of ClO<sub>2</sub>. With this high level of Cl<sub>2</sub> in the ClO<sub>2</sub> solution and the Cl<sub>2</sub> by-product for the conventional process, a bleach plant can never operate higher than about 81-82% D. This includes Cl<sub>2</sub> water made as a by-product and applied to the first bleach stage. With a low amount of Cl<sub>2</sub> in ClO<sub>2</sub> solution from a traditional methanol based process, the highest % ClO<sub>2</sub> substitution possible is 98-99%. Figure 12 shows

that the measured amount of AOX is reduced by more than 50% when using the SVP-LITE™ process, for 100% D with H<sub>2</sub>O<sub>2</sub> in the EO stage. This assumes the measured AOX for 85% D is the same for 81-82% D.

Figure 12. Effect of ClO<sub>2</sub> Process on AOX



The ClO<sub>2</sub> plant at Simpson is designed to operate at 16 TPD and has run as high as 22 - 24 TPD. ClO<sub>2</sub> production is limited to 12 - 14 TPD in the warmer months, since the only source of chilled water for making ClO<sub>2</sub> solution is city water. This runs about 60°F in the summer. After the % D trials were complete, Simpson installed a chiller unit, which now allows the no. 1 fiber line to operate 100% D at design capacity.

### Bleaching Costs

Bleaching costs have been evaluated for various levels of % D on the lab scale (13) as well as the mill scale (10,14). Most evaluations are for four to five stages of bleaching, some using oxygen delignification before bleaching. There has been little work done to evaluate the bleaching costs for various levels of % D for a three stage bleach plant like Simpson's.

The bleaching conditions are shown in Table 2 while the chemical charges and bleaching costs are shown in Table 3. Also the results of the actual and predicted relative bleaching cost for all the ClO<sub>2</sub> substitution runs are shown in Figures 13 and 14. The actual relative bleaching cost is the cost of bleaching chemicals, corrected for brownstock kappa no. variations. The predicted relative bleaching cost is for the projected optimized condition with well washed brownstock. This cost is corrected for brownstock kappa no. variations, along with adjustments to the caustic and H<sub>2</sub>O<sub>2</sub> used in the EO stage and ClO<sub>2</sub> used in the final stage. The 15% D cost is the reference for all comparisons.

Figure 13 shows the relative bleaching costs for 15% to 100% ClO<sub>2</sub> substitution when H<sub>2</sub>O<sub>2</sub> was not used. For 15 - 50% D, there is essentially no increase in bleaching cost. Above 50% D, the bleaching cost rises to a maximum at

100% D. These results are similar to Axegard's for a five stage bleaching sequence (13). To operate dioxin free at 85% D, the actual cost shows about a 50% increase over the reference, while the predicted cost is about 30% over the 15% D case. To operate Cl<sub>2</sub> free, without H<sub>2</sub>O<sub>2</sub>, the actual cost was 78% more than the reference cost, whereas the predicted cost shows only a 38% increase. The reasons for such a large difference between the actual and predicted costs for 100% D are not fully understood. Some of the contributing factors include: poor brownstock washing, unoptimized bleaching conditions, and lack of brightness development in a three stage bleach plant when not using H<sub>2</sub>O<sub>2</sub>.

Figure 13. Relative Bleaching Cost for Various Levels of %D (Without H<sub>2</sub>O<sub>2</sub>)

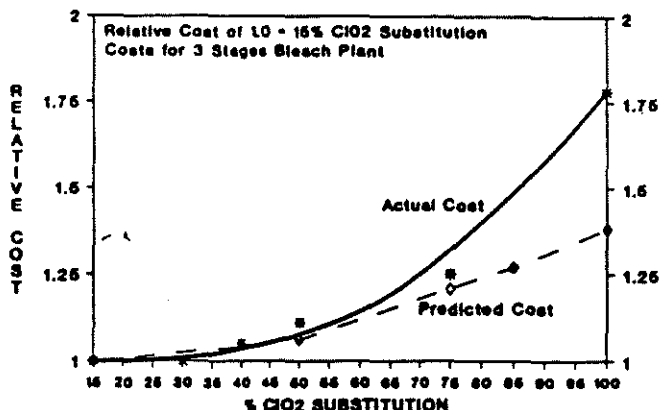


Figure 14. Relative Bleaching Cost for Various Levels of %D (With H<sub>2</sub>O<sub>2</sub>)

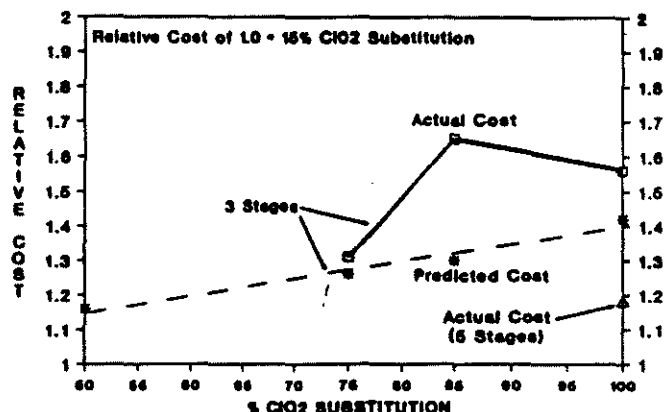


Figure 14 shows the relative bleaching costs for 50% D to 100% D when H<sub>2</sub>O<sub>2</sub> was used. The actual costs were higher than the predicted costs primarily due to over application of H<sub>2</sub>O<sub>2</sub> in the EO stage, brownstock washing variability, and unoptimized bleaching conditions. H<sub>2</sub>O<sub>2</sub> was over applied by 1.5 to 3.5 kg/ADMT during these runs. To operate at 85% D or dioxin free with H<sub>2</sub>O<sub>2</sub>, the actual cost

**TABLE 2 - KEY BLEACHING CONDITIONS for VARIOUS LEVELS of ClO<sub>2</sub> SUBSTITUTION**

BLEACHING SEQUENCE	NO. DAYS	PROD'N RATE ADMT/D unbl.	KAPPA NO.	SODA LOSS kg Na <sub>2</sub> SO <sub>4</sub> per ADMT	DC STAGE			E STAGE			D STAGE	
					TEMP. deg. C	FINAL pH	RET'N (MIN.)	TEMP. deg. C	VAT pH	CE K. NO.	TEMP. deg. C	FINAL pH
<b>WITHOUT H<sub>2</sub>O<sub>2</sub></b> (C85+D15)(EO)D	35.0	440	28.5	30.4	53.9	-	31.0	74.4	10.5	2.5	73.9	3.4
(D30C70)(EO)D	2.0	402	29.4	-	54.4	-	34.3	73.9	10.5	3.0	76.7	4.4
(D40C60)(EO)D	2.0	468	30.7	-	53.8	-	29.0	71.2	9.8	2.4	73.9	4.3
(D50C50)(EO)D	38.0	322	30.3	18.6	54.3	-	50.7	70.7	8.1	-	74.4	2.5
(D75C25)(EO)D	10.0	369	31.2	10.4	53.3	-	46.6	71.1	8.6	2.7	76.7	2.4
D100(EO)D	6.0	259	22.8	23.9	56.7	2.5	68.0	74.1	8.5	2.2	77.8	2.4
<b>WITH H<sub>2</sub>O<sub>2</sub></b> (D75C25)(EPO)D	2.0	482	26.0	-	54.4	-	40.4	76.7	10.1	-	75.0	3.2
(D85C15)(EPO)D	25.0	384	24.6	16.5	54.4	-	50.9	73.0	9.8	3.0	75.0	2.3
D100(EPO)D	22.0	301	26.0	13.8	56.5	2.6	60.5	76.0	10.5	3.0	75.6	2.5

**TABLE 3 - CHEMICAL CHARGES AND RELATIVE BLEACHING COSTS FOR VARIOUS LEVELS OF ClO<sub>2</sub> SUBSTITUTION**

BLEACHING SEQUENCE	DC STAGE kg/ADMT,bl.		MOLEC. CL <sub>2</sub> MULT.	CHARGE FACTOR [1]	E STAGE kg/ADMT,bl.			D STAGE kg/ADMT,bl.		TOTAL CHARGE FACTOR [1]	ACTUAL RELATIVE BLEACH COST [2]	PREDICTED RELATIVE BLEACH COST [3]
	Cl <sub>2</sub>	ClO <sub>2</sub>			NaOH	O <sub>2</sub>	H <sub>2</sub> O <sub>2</sub>	ClO <sub>2</sub>	NaOH			
<b>WITHOUT H<sub>2</sub>O<sub>2</sub></b> (C85+D15)(EO)D	65.0	4.6	0.253	2.49	42.9	10.8	0.0	11.1	4.5	3.43	1.00	1.00
(D30C70)(EO)D	47.6	7.9	0.181	2.16	43.3	10.9	0.0	11.5	5.0	3.10	1.00	-
(D40C60)(EO)D	45.7	11.8	0.165	2.29	36.3	2.0	0.0	14.2	4.6	3.42	1.11	-
(D50C50)(EO)D	43.7	16.6	0.160	2.65	23.1	10.7	0.0	9.2	4.0	3.38	1.11	1.06
(D75C25)(EO)D	24.0	27.0	0.086	2.80	19.5	10.9	0.0	9.5	3.7	3.54	1.25	1.21
D100(EO)D	0.0	33.1	0.000	3.51	12.2	10.9	0.0	12.3	5.3	4.82	1.78	1.38
<b>WITH H<sub>2</sub>O<sub>2</sub></b> (D75C25)(EPO)D	15.6	18.2	0.067	2.25	27.0	5.4	8.2	7.2	0.4	2.92	1.31	1.26
(D85C15)(EPO)D	11.6	26.0	0.052	2.67	25.1	7.1	8.2	9.6	1.8	3.61	1.65	1.30
D100(EPO)D	0.0	26.8	0.000	2.50	23.6	9.5	10.8	10.4	2.3	3.47	1.56	1.42

- [1] - Charge factor units => kg. of active Cl<sub>2</sub>/ADMT, unbl. per brownstock kappa no.
- [2] - Corrected for kappa no. variations, caustic and H<sub>2</sub>O<sub>2</sub> application on the EO stage.
- [3] - Corrected for kappa no. variations, caustic & H<sub>2</sub>O<sub>2</sub> addition to the EO stage, and ClO<sub>2</sub> in the final stage.

was 65% more than the reference, while the predicted cost was 30% more. To operate at 100% D or Cl<sub>2</sub> free, the actual cost was 56% more than 15% D, with the predicted cost being 42% higher. Also included in this figure is the actual cost for a five stage bleach plant, D100-EPO-D<sub>1</sub>-EP-D<sub>2</sub>, operating at 100% D and at pulping and bleaching conditions similar to Simpson's. For five stages the operating costs for 100% D are only 18% greater than the reference, since the bleaching is distributed over five stages rather than three. The cost of operating dioxin free is substantial, and even higher for a Cl<sub>2</sub> free operation, especially for a three stage bleach plant. Even at an increased cost, Simpson is committed to producing

fully bleached market pulp from an "environmentally friendly" process.

**Pulp Quality**

Table 4 lists the pulp quality figures for each operational period studied. The average market pulp brightness was in the range of 86 - 88% GE. The lowest brightness came on the 100% D run with no H<sub>2</sub>O<sub>2</sub>. For the same run with H<sub>2</sub>O<sub>2</sub> and a higher kappa no., the brightness was 0.9 of a point higher. This shows that H<sub>2</sub>O<sub>2</sub> is required to overcome the less efficient delignification at 100% D, which results

n achieving the brightness target for Cl<sub>2</sub> free market pulp. Brightness reversion and shive count (or dirt) appear to be slightly better for 75% D and above.

The measured strength properties (i.e., burst, tear, and breaking length) are essentially equal and within target specifications, except for 100% D, without H<sub>2</sub>O<sub>2</sub>, and 85% D, with H<sub>2</sub>O<sub>2</sub>. For 100% D, the tear was a bit lower than the others. This is probably a result of the pulp being overcooked (i.e., low incoming kappa no.). For the 85% D case, both tear and burst were lower, which may be explained by the higher final brightness of these runs. In general, Simpson observes high % D gives equivalent pulp strength properties as conventional bleaching for fully bleached market pulp.

**TABLE 4 - PULP QUALITY for VARIOUS LEVELS of ClO<sub>2</sub> SUBSTITUTION**

BLEACHING SEQUENCE	FINAL BR. % GE	BR. REV.	DIRT CT. ct./gm.	FINAL VISC. cps	BURST FACT.	TEAR FACT.	BR. LGT. km
<b>WITHOUT H<sub>2</sub>O<sub>2</sub></b>							
(C85+D15)(EO)D	87.2	3.5	1.0	18.7	81.1	123.3	10.1
(D30C70)(EO)D	87.9	-	-	18.7	-	-	-
(D40C60)(EO)D	86.9	-	-	18.9	-	-	-
(D50C50)(EO)D	87.5	3.4	1.0	19.0	79.7	132.9	10.5
(D75C25)(EO)D	87.6	2.6	0.4	20.8	80.3	136.0	9.6
D100(EO)D	86.1	2.9	0.0	19.5	81.6	111.4	10.4
<b>WITH H<sub>2</sub>O<sub>2</sub></b>							
(D75C25)(EPO)D	86.6	-	-	-	-	-	-
(D85C15)(EPO)D	88.8	2.5	0.8	14.9	75.4	115.7	10.0
D100(EPO)D	87.0	2.9	0.5	16.5	80.0	125.8	9.6

#### General Operational Observations

There are a few basic observations in operating the bleach plant at high substitution levels which did not show up in the results. First, the optical/residual sensor for the DC stage had to be reset at the 85% D level and above. Next, full replacement with ClO<sub>2</sub> was much more sensitive to changes in brownstock kappa no. and black liquor carryover. The addition of H<sub>2</sub>O<sub>2</sub> to the EO stage improved the overall stability of the bleach plant, especially when operating at 100% D.

#### CONCLUSIONS

The following main conclusions can be drawn from the high ClO<sub>2</sub> substitution experience at Simpson:

1. High % D (50% +) in the first bleach stage significantly reduced AOX and TCDD/F in the effluent and TCDD/F in the pulp.

2. At an AOX of 1.5 kg/tp in the effluent, after secondary treatment, the mill essentially operates dioxin (TCDD/F) free. This result is achieved by running at 85% D, which is equivalent to operating at a molecular chlorine multiple of less than 0.05.
3. H<sub>2</sub>O<sub>2</sub> added to the EO stage reduces the charge factor in the DC stage, which lowers the amount of elemental chlorine applied to this stage. This should have resulted in less AOX in the effluent, but it did not. Optimization of the brownstock washer and other mill modifications are expected to resolve this apparent inconsistency.
4. When operating at 100% D, 1 lb. of H<sub>2</sub>O<sub>2</sub> in the EO stage displaced 1.2 lbs of ClO<sub>2</sub> for the entire bleach plant. When H<sub>2</sub>O<sub>2</sub> was added to 100% D runs, the market pulp brightness was achieved and the bleach plant was more stable during upset conditions.
5. The SVP-LITE™ ClO<sub>2</sub> process used at Simpson Tacoma produces a ClO<sub>2</sub> solution with minimal Cl<sub>2</sub>, resulting in about 50% less AOX in the effluent after secondary treatment than the conventional process for 100% ClO<sub>2</sub> substitution.
6. Finished pulp properties of brightness, strength and cleanliness were essentially unchanged when replacing high amounts of Cl<sub>2</sub> in the DC stage with ClO<sub>2</sub>.
7. The cost for operating from 15 - 50% D was the same, and increased above 50% D. To operate dioxin free (85% D) with H<sub>2</sub>O<sub>2</sub>, the actual cost was 65% more than the reference, while the operating cost after optimization should be 30% higher. To operate Cl<sub>2</sub> free (100% D) with H<sub>2</sub>O<sub>2</sub>, the actual cost was 56% more than the 15% D runs, while the predicted cost is about 42% higher. For a five stage bleach plant, the bleaching cost is less than a three stage bleach plant since the bleaching is distributed over five stages rather than three.

#### NEXT STEPS

Simpson's progress in AOX and dioxin (TCDD/F) reduction has resulted in a wastewater discharge environmental permit (NPDES) based on maintaining a target substitution level of 85% D and monitoring AOX and dioxin levels for the next two years. The bleach plant has operated TCDD/F free since the high substitution trials in June of 1990 at 85% D with H<sub>2</sub>O<sub>2</sub> in the EO stage. Cl<sub>2</sub> free market pulp runs have been made, achieving pulp brightness in excess of 88% GE while using H<sub>2</sub>O<sub>2</sub>. Simpson's next step is to make extended runs as a Cl<sub>2</sub> free mill. It will be made possible once the new brownstock washing system is fully operational. Then the Tacoma mill will be poised to meet both future environmental legislation and future market demands.

## REFERENCES

1. Klein, R.E., "Simpson Tacoma Kraft Co. Mill Starts Up New Bleach Plant", Pulp & Paper, October 1990, p. 88.
2. Annergren, G.E., Lindblad, P., Carlsson, G., and Norrby, M., "Spent Liquors from Bleaching of Softwood Kraft Pulps. Effect of Chlorination Variables on the Content of Lipophilic Chlorinated Organic Matter with Low Molecular Mass", 1986 Proceedings of the EuCePa Symposium "Environmental Protection in the 90's", p. 65 (Helsinki, May 19-22, 1986).
3. Axegard, P., "Improvement of Bleach Plant Effluent by Cutting Back on Chlorine", Pulp & Paper Canada, 90:5 (1989) p. T183.
4. Axegard, P., "Substituting Chlorine Dioxide for Elemental Chlorine Makes the Bleach Plant Effluent Less Toxic", Tappi Journal, Vol. 69, No. 10, October 1986, p. 54.
5. Axegard, P. and Renberg, L., "The Influence of Bleaching Chemicals and Lignin Content on the Formation of Polychlorinated Dioxins and Dibenzofurans", Chemosphere, Vol. 19, Nos. 1-6, 1989, p. 661.
6. Axegard, P., "Chlorine Dioxide Substitution Reduces the Load of TOCl", TAPPI 1987 Pulping Conference Proceedings, p.105 (Washington, Nov. 1-5, 1987).
7. McDonough, T., "Overview of Emerging Technology", Workshop on Emerging Pulping and Chlorine-Free Bleaching Technologies, N.C. State University, March 18-20, 1991.
8. Standard Methods for the Examination of Water and Wastewater, 16<sup>th</sup> Edition, Method 506 "Organic Halogen (Total) Adsorption - Pyrolysis - Titrimetric Method (Tentative)", Microcolumn (4a) Method.
9. Germgard, U., Svensk Papperstid. (15): R138, 1985.
10. Munro, F., "Environmentally Influenced Evolution of E.B. Eddy Espanola's Bleaching Sequences", TAPPI 1990 Bleach Plant Operations Short Course, p. 13 (Hilton Head, S.C., June 17-22, 1990).
11. Basta, J., Holtinger, L., Hook, J., and Lundgren, P., "Low AOX, Possibilities & Consequences", TAPPI 1989 Pulping Conference Proceedings, p. 427 (Seattle, Oct. 22-25, 1989).
12. Basta, J., Andersson, L., Blom, C., Holtinger, L., Hook, J., "Reducing of AOX Levels. Part 2: Chlorine - Free Bleaching", 6<sup>th</sup> International Symposium on Wood & Pulping Chemistry (Victoria, Australia, April 30-May 4, 1991).
13. Axegard, P., "Effect of ClO<sub>2</sub> Substitution on Bleaching Efficiency and the Formation of Organically Bound Chlorine - Part II", Journal of Pulp and Paper Science, Vol. 12, No. 3, May 1986.
14. Pryke, D., Wilson, R., Swaney, J., O'Connor, B., Luthe, C., "Mill Experience with Chlorine Dioxide Delignification", 1991 International Pulp Bleaching Conference, Vol. 3, p. 219 (Stockholm, June 11-14, 1991).

## ACKNOWLEDGEMENT

Special thanks to Mr. Per Lundgren and Mr. Nils-Goran Johansson of Eka Nobel AB for their support during the % D trials and their guidance in writing this paper. The authors also wish to thank EKA NOBEL's lab in Bohus, Sweden for its work.

**EXHIBIT B to  
Boise Cascade Corporation's Petition for  
Reconsideration or Rehearing**

Docketed  
For SRBJ & C

RECEIVED  
APR 3 1992

BEFORE THE POLLUTION CONTROL HEARINGS BOARD  
STATE OF WASHINGTON

1	JAMES RIVER II, INC., et. al.,	)		STOEL RIVES BOLEY
2		)	PCHB Nos. 91-140, 143, 146	JONES & GREY
3	Appellants,	)	147, 148, 150, 151, 154	
4		)	169 & 182	
5	v.	)		
6		)	PARTIAL SUMMARY	
7	STATE OF WASHINGTON,	)	JUDGMENT ORDER	
8	DEPARTMENT OF ECOLOGY,	)		
9	Respondent.	)		

10 These matters are appeals of the terms of NPDES permits issued to the following pulp  
 11 and paper manufacturers in the State of Washington; James River II, Inc. (PCHB No. 91-140);  
 12 Longview Fibre Company (PCHB No. 91-150); Weyerhaeuser Company (PCHB Nos. 91-146,  
 13 147 and 148); Scott Paper Company (PCHB No. 91-154); ITT Rayonier Incorporated (PCHB  
 14 Nos. 91-169 and 182); Boise Cascade Corporation (PCHB No. 91-143) and Georgia Pacific  
 15 Corporation (PCHB No. 91-151). The appealing companies (hereinafter referred to as "the  
 16 Mills") filed motions for summary judgment directed to terms and conditions concerning  
 17 control of AOX in their respective permits.

18 A list of the filings on these motions consists of:

- 19 1. Appellant's Motion for Partial Summary Judgment with Order,
- 20 Memorandum, attachments and affidavit of John W. Lee, Jr., filed August 30,
- 21 1991.
- 22 2. Ecology's Memorandum in Opposition to Motions for Summary
- 23 Judgment on AOX, filed January 10, 1992.

1  
2 **3. Appellants' Joint Reply Memorandum in Support of Motions for**  
3 **Summary Judgment filed January 21, 1992.**

4 **Having considered these together with the records and files herein and being fully advised, it is**  
5 **concluded:**

6 **I**

7 **There are no genuine issues of material fact and partial summary judgment on the AOX**  
8 **issues can be granted as a matter of law.**

9 **II**

10 **With relation to AOX, the Mills requesting summary judgment include James River**  
11 **(Camas), Boise Cascade (Wallula), Weyerhaeuser Company (Longview, Cosmopolis and**  
12 **Everett), ITT Rayonier (Port Angeles and Grays Harbor), Longview Fibre (Longview), Scott**  
13 **Paper (Everett) and Georgia-Pacific (Bellingham). NPDES permits issued at all these Mills**  
14 **contained requirements to control AOX.**

15 **III**

16 **Ecology has established final AOX annual average and monthly maximum effluent**  
17 **limitation of 1.5 kilogram per air dried metric ton ("kg/ADMT") and 1.9 kg/ADMT,**  
18 **respectively, and related requirements for each of the appellant Mills.**

19 **IV**

20 **No national effluent limitations guidelines for AOX have been established by EPA for**  
21 **bleached pulp and paper mills.**

22 **V**

23 **In establishing AOX effluent limitations, Ecology was required to use its Best**  
24 **Professional Judgment ("BPJ") authority established under 33 U.S.C. §§ 1314(b), 1342(a)(1);**  
25 **40 C.F.R. § 124.3(c) and (d).**

26 **PARTIAL SUMMARY JUDGMENT**  
27 **ORDER**

**PCHB No. 91-140, et al.**

**(2)**



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

VI

The AOX requirement in each of the Mills' permits include: (a) AOX monitoring provisions; (b) obligations to complete preliminary and final engineering studies to determine whether compliance with the 1.5 and 1.9 kg/ADMT final effluent limits is both technically and economically achievable; and (c) a compliance deadline of 56 months from the date of permit issuance within which each Mill is directed to comply with the 1.5 and 1.9 kg/ADMT AOX effluent limits.

VII

Ecology set final effluent limits of 1.5 and 1.9 kg/ADMT without undertaking a case-by-case analysis despite the important distinctions among the Mills which employ both kraft and sulfite processes and which produce a broad range of products.

VIII

In establishing final AOX effluent limitations, Ecology employed a two-stage process. The first stage establishes the final effluent limitations without the site-specific data regarding: (1) individual Mill products and processes; (2) the economic impact of attaining the annual average and monthly maximum effluent limits; and (3) the engineering constraints associated with meeting the effluent limits, as required under both federal and state law. 33 U.S.C. § 1314; 40 C.F. R. § 125.3(c) and (d); RCW 90.48.520.

IX

The second stage of the AOX program allows for subsequent potential modification of the final effluent limits based on the *post-hoc* information generated by each Mill through compliance with its permit requirements.

1  
2 X

3 The effect of this two-stage approach is to create effluent limits without the prior case-  
4 by-case analysis required by 33 U.S.C. § 1314(b)(2)(B); 40 C.F.R. § 125.3(c) and (d); and  
5 RCW 90.48.520 when establishing BPJ effluent limitations.

6 XI

7 The Board previously ruled in a Best Practicable Treatment individual permit case that  
8 the all known, available and reasonable treatment requirement ("AKART") mandates a case-  
9 by-case consideration of the factors established under 40 C.F.R. § 125.3(c) and (d). Crown  
10 Zellerbach v. Ecology, PCHB No. 85-223 (1986).

11 XII

12 Ecology's two-stage process for setting AOX effluent limitations is inconsistent with  
13 both the federal requirement established at 40 C.F.R. § 125.3(c) and (d) and the state  
14 requirement for all known, available and reasonable treatment set forth at RCW 90.48.520.

15 XIII

16 Under these circumstances, we conclude that, under Washington's AKART standard,  
17 Ecology is required to undertake a case-by-case analysis using BPJ factors established at 40  
18 C.F.R. § 125.3(c) and (d).

19 XIV

20 The AOX engineering report requirements are inextricably interwoven with the AOX  
21 effluent limitations in that they ultimately provide for the attainment of specific numerical  
22 limitations; therefore, the permit requirements mandating submission of AOX engineering  
23 reports should be reversed for the same reason as the effluent limitations.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

XV

Our ruling, however, does not preclude Ecology from subsequently requiring engineering reports. These engineering reports, however, cannot be linked to attainment of any final effluent limitation established by Ecology in violation of the requirements under 40 C.F.R. § 125.3(c) and (d).

XVI

We conclude that the AOX monitoring is not impermissibly linked to the AOX effluent limits on appeal and can be sustained.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

ORDER

Summary Judgment is granted to the Mills to the extent that the annual average and monthly maximum effluent limitations for AOX (i.e., 1.5 and 1.9 kg/ADMT, respectively), scope of work and engineering report requirements, together with all associated compliance deadlines, all of which are imposed in NPDES permits issued to all ten Mills, are reversed.

Summary Judgment is granted to Ecology with regard to the AOX monitoring requirements which are affirmed.


DONE at Lacey, WA, this 2<sup>nd</sup> day of April, 1992.

POLLUTION CONTROL HEARINGS BOARD

  
HAROLD S. ZIMMERMAN, Chairman

  
JUDITH A. BENDOR, Member

  
ANNETTE S. MCGEE, Member

  
WILLIAM A. HARRISON  
Administrative Appeals Judge

P91-1400

WEST PUBLISHING COMPANY  
610 OPPERMAN DRIVE  
P.O. BOX 64526  
SAINT PAUL, MN 55164-0526

FORWARD & ADDRESS CORRECTION

\*\*\*\*\* 5-DIGIT 97204  
0009860•01 0002308 22  
961-192-100 08619

STEEL RIVER BOLEY JONES  
R. COBY  
SUITE 2000  
300 SW 7TH AV.  
PORTLAND, OR 97204-1268

BULK RATE  
U.S. POSTAGE  
PAID  
St. Paul, Minn.  
Permit No. 21

1992

No. 6

WEST'S  
WASHINGTON  
LEGISLATIVE SERVICE

1992 Regular Session

Chapters 174 to 212

For Complete Tables and Index  
See Pamphlet No. 4

In This Issue

Summary of current legislation, see Legislative Highlights, page 1.

WESTLAW Legislative Database: WA-LEGIS  
See Preface for further information.

## REGULAR SESSION

MENT AND  
STEM

and fire fighters' retirement

## ATE OF WASHINGTON:

ended to read as follows:  
 employees, with their depend-  
 of this state shall be  
 program administered under  
 nty, municipality, or other  
 insurance or self-insurance  
 de- ~~PROVIDED, That this~~  
~~reement officers' and fire~~  
~~ED FURTHER, That~~ In  
 is section, members of the  
 nsfer if such members are  
 insurance program being  
 all costs of insurance for

or other political subdivi-  
 shall:

made, which shall include

transfer as a unit, and  
 employer contributions in  
 ployer; and

shall effect a transfer of  
 alth care program applied

orcement officers' and fire  
 ct to chapter 41.56 RCW.

## UNDMENT

ed vehicles; and amending

## ATE OF WASHINGTON:

ikeout

Sec. 1. RCW 46.55.140 and 1991 c 20 s 2 are each amended to read as follows.

(1) A registered tow truck operator who has a valid and signed impoundment authorization has a lien upon the impounded vehicle for services provided in the towing and storage of the vehicle, unless the impoundment is determined to have been invalid. The lien does not apply to personal property in or upon the vehicle that is not permanently attached to or is not an integral part of the vehicle. The registered tow truck operator also has a deficiency claim against the registered owner of the vehicle for services provided in the towing and storage of the vehicle not to exceed the sum of three hundred dollars less the amount bid at auction, and for vehicles of over ten thousand pounds gross vehicle weight, the operator has a deficiency claim of one thousand dollars less the amount bid at auction, unless the impound is determined to be invalid. The limitation on towing and storage deficiency claims does not apply to an impound directed by a law enforcement officer. In no case may the cost of the auction or a buyer's fee be added to the amount charged for the vehicle at the auction, the vehicle's lien, or the coverage due. A registered owner who has completed and filed with the department the seller's report as provided for by RCW 46.12.101 and has timely and properly filed the seller's report is relieved of liability under this section. The person named as the new owner of the vehicle on the timely and properly filed seller's report shall assume liability under this section.

(2) Any person who tows, removes, or otherwise disturbs any vehicle parked, stalled, or otherwise left on privately owned or controlled property, and any person owning or controlling the private property, or either of them, are liable to the owner or operator of a vehicle, or each of them, for consequential and incidental damages arising from any interference with the ownership or use of the vehicle which does not comply with the requirements of this chapter.

Approved April 2, 1992.

Effective June 11, 1992, 90 days after date of adjournment.

**WATER POLLUTION—PULP AND PAPER MILLS—CHLORINATED  
ORGANIC COMPOUND EMISSIONS**

**CHAPTER 201**

S.S.B. No. 5724

AN ACT Relating to water pollution control of chlorinated organic compound emissions; and adding a new section to chapter 90.48 RCW.

*BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:*

NEW SECTION. Sec. 1. A new section is added to chapter 90.48 RCW to read as follows:

(1) The department may require each pulp mill and paper mill discharging chlorinated organics to conduct and submit an engineering report on the cost of installing technology designed to reduce the amount of chlorinated organic compounds discharged into the waters of the state. The department shall allow at least twenty-four months from the effective date of this act for each pulp mill and each paper mill to submit an engineering report.

(2) The department may not issue a permit establishing limits to the discharge of chlorinated organic compounds by a pulp mill or a paper mill under RCW 90.48.160 or 90.48.260 until at least nine months after receiving an engineering report from a kraft mill and at least fifteen months after receiving an engineering report from a sulfite mill.

(3) Nothing in this section shall apply to dioxin compounds.

Approved April 2, 1992.

Effective June 11, 1992, 90 days after date of adjournment.

Additions are indicated by underline; deletions by ~~strikeout~~

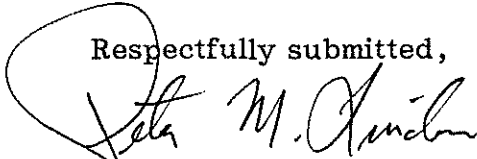
1                                   BEFORE THE ENVIRONMENTAL QUALITY COMMISSION  
2   OF THE STATE OF OREGON

3       In the matter of National Pollutant       )  
4       Discharge Elimination System Waste    )  
5       Discharge Permit No. 100715, Issued    )  
6       to the City of St. Helens on            )  
7       November 14, 1990,                    )  
8   )  
9       and   )  
10    )  
11       In the matter of National Pollutant    )  
12       Discharge Elimination System Waste    )  
13       Discharge Permit No. 100716, Issued    )  
14       to James River II, Inc., on            )  
15       November 14, 1990.                    )

CITY OF ST. HELENS PETITION  
FOR RECONSIDERATION OR  
REHEARING

16                   CITY OF ST. HELENS petitions for reconsideration or rehearing of the  
17       Commission Final Order of April 16, 1992, for the reasons stated by James River and  
18       Boise Cascade.

19    )  
20    )  
21    )  
22    )  
23    )  
24    )  
25    )  
26    )

Respectfully submitted,  


Peter M. Linden  
City Attorney  
OSB No. 73183

PETER M. LINDEN, City Attorney  
P.O. Box 278       St. Helens, Oregon 97051  
Phone: (503) 397-6272

CERTIFICATE OF FILING AND SERVICE

I hereby certify that I filed the original of the foregoing City of St. Helens Petition for Reconsideration or Rehearing by causing it to be mailed to the Office of the Director of the Department of Environmental Quality, 811 SW Sixth Avenue, Portland, Oregon 97204, on June 18, 1992.

I further certify that I served the foregoing City of St. Helens Petition for Reconsideration or Rehearing on:

Hon. Arno H. Denecke  
3890 Dakota Road SE  
Salem, OR 97302

Ms. Linda K. Williams  
1744 NE Clackamas Street  
Portland, OR 97232

Mr. Larry Edelman  
Oregon Department of Justice  
1515 SW Fifth Avenue, Suite 410  
Portland, OR 97201

Mr. John W. Gould  
Mr. Richard H. Williams  
520 SW Yamhill, Suite 800  
Portland, OR 97204

Mr. John E. Bonine  
School of Law  
University of Oregon  
Eugene, OR 97403

Mr. William W. Wessinger  
Environmental Quality Commission  
121 SW Salmon, Suite 1100  
Portland, OR 97204

Mr. Larry Knudsen  
Oregon Department of Justice  
1515 SW Fifth Avenue, Suite 410  
Portland, OR 97201

Ms. Lydia Taylor  
Department of Environmental Quality  
811 SW Sixth Avenue  
Portland, OR 97204

Mr. Ralph A. Bradley  
296 E Fifth Street, Suite 309  
Eugene, OR 97401

Mr. Michael R. Campbell  
900 SW Fifth Avenue, Suite 2300  
Portland, OR 97204

Mr. Fred Hansen  
Department of Environmental Quality  
811 SW Sixth Avenue  
Portland, OR 97204

Mr. Emery N. Castle  
Oregon State University  
307 Ballard Hall  
Corvallis, OR 97331

Mr. Henry Lorenzen  
Environmental Quality Commission  
PO Box 218  
Pendleton, OR 97801

Ms. Carol A. Whipple  
Environmental Quality Commission  
21755 Highway 138 West  
Elkton, OR 97436

Ms. Linda McMahan, EQC  
Berry Botanic Garden  
11505 SW Summerville Avenue  
Portland, OR 97219

Mr. Jay T. Waldron  
Mr. David F. Bartz, Jr.  
1211 SW Fifth Avenue  
Portland, OR 97204

Mr. Brian J. King  
West One Plaza, Suite 1400  
Boise, ID 83702

Mr. Lawrence Knudson  
Department of Justice  
1515 SW Fifth Avenue, No. 410  
Portland, OR 97201

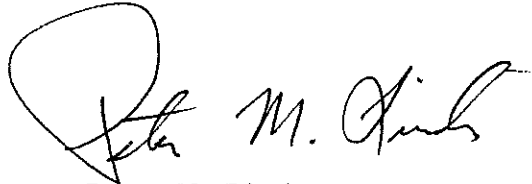
PETER M. LINDEN, City Attorney  
P.O. Box 278 St. Helens, Oregon 97051  
Phone: (503) 397-6272



1 Mr. Richard Baxendale  
2 509 National Building  
3 1008 Western Avenue  
4 Seattle, WA 98104

5 by mailing by first class mail to those persons a true and correct copy thereof, placed  
6 in a sealed envelope addressed to them at the addresses set forth, and deposited in the  
7 United State Post Office a St. Helens, Oregon, on June 18, 1992, with the postage  
8 prepaid.

9 DATED: June 18, 1992



10 Peter M. Linden  
11 City Attorney

STOEL RIVES BOLEY  
JONES & GREY

ATTORNEYS AT LAW  
SUITE 2300  
STANDARD INSURANCE CENTER  
900 SW FIFTH AVENUE  
PORTLAND, OREGON 97204-1268

Telephone (503) 224-3380  
Telecopier (503) 220-2480  
Cable Lawport  
Telex 703455

Writer's Direct Dial Number

(503) 294-9676

June 12, 1992

**BY MESSENGER**

Mr. Fred Hansen  
Director  
Department of Environmental Quality  
811 S.W. Sixth Avenue  
Portland, Oregon 97204

Re: In the matter of NPDES Permit No. 100715, issued  
to the City of St. Helens, and NPDES Permit No.  
100716, issued to James River II, Inc.

Dear Mr. Hansen:

I enclose for filing in the above entitled matter  
Boise Cascade Corporation's Petition for Reconsideration or  
Rehearing.

Very truly yours,



Michael R. Campbell

MRC:bak  
Enclosure

cc (w/encl.): Service List  
Mr. William W. Wessinger  
Mr. Emery N. Castle  
Mr. Henry Lorenzen  
Ms. Linda McMahan  
Ms. Carol A. Whipple

1 BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

2 OF THE STATE OF OREGON

3 In the Matter of National )  
4 Pollutant Discharge )  
5 Elimination System Waste )  
6 Discharge Permit No. 100715, )  
7 issued to the City of St. )  
8 Helens on November 14, 1990, )

9 and )

10 In the Matter of National )  
11 Pollutant Discharge )  
12 Elimination System Waste )  
13 Discharge Permit No. 100716, )  
14 issued to James River II, Inc. )  
15 on November 14, 1990. )

PETITION BY JAMES RIVER  
II, INC. FOR  
RECONSIDERATION OR  
REHEARING

16 I.

17 INTRODUCTION

18 At its March 12, 1992 meeting, the Commission decided to  
19 include limits on organochlorines, measured as AOX, in the NPDES  
20 permits issued to James River for its Wauna Mill and to the City of  
21 St. Helens covering effluent from Boise Cascade's St. Helens Mill.

22 Since the Commission's decision to impose AOX limits,  
23 there have been new developments related to both policy and  
24 technical matters. In light of factual data presented in the  
25 contested case proceeding plus these new developments, James River  
26 is proposing a revised approach to regulating organochlorine  
discharges from the Wauna Mill. This petition reviews recent

1 developments and requests reconsideration or rehearing of the  
2 matter of organochlorine regulation for the Wauna Mill.

3 II.

4 **Policy-related developments have occurred**  
5 **since the Commission decided to impose AOX limits**  
6 **on the Wauna and St. Helens Mills.**

7 When the Commission decided to impose AOX limits, it appeared  
8 that both Washington and Oregon would include AOX limits in  
9 bleached pulp mill permits. However, on March 12, 1992, the  
10 Washington legislature enacted and Governor Gardner later approved  
11 a bill which has the effect of removing AOX limits from the permits  
12 issued by the Department of Ecology. The bill also prohibits the  
13 Department from imposing AOX limits until 1995 pending receipt of  
14 engineering reports from each of the mills. The potential  
15 establishment of permit limits on AOX discharges from mills on both  
16 sides of the Columbia River will thus be delayed until 1995 at the  
17 earliest. No state other than Oregon and Washington has issued  
18 permits including AOX limits.<sup>1</sup> By reason of the Washington  
19 legislation, Oregon is now the only state in the nation which has  
20 subjected its mills to such regulation. A copy of the Washington  
21 legislation is attached to this petition as Exhibit A.

22  
23  
24  
25 <sup>1</sup> Nor, with one exception, has EPA issued such a permit.  
26 In early March 1992, EPA Region 10 issued a permit including an AOX  
limit for the Potlatch mill in Idaho. In its order of April 16,  
the Commission denied DEQ's motion to open the record or take  
official notice of the Potlatch permit as issued in final form.

1 III.

2 **New technical information has become available**  
3 **since the Commission decided to impose AOX limits**  
4 **on the Wauna and St. Helens Mills.**

5 The Simpson Mill in Tacoma, Washington has installed  
6 bleaching modifications very similar to those currently being  
7 installed at the Wauna Mill. A report published in the Proceedings  
8 of the TAPPI Environmental Conference, April 1992, shows that the  
9 Simpson Mill can achieve an AOX discharge of less than 1.5 kg/ADMT  
10 without employing oxygen delignification. The mill accomplishes  
11 this by substantially reducing its use of gaseous chlorine through  
12 high chlorine dioxide substitution and by addition of hydrogen  
13 peroxide to its second bleaching state. A copy of the Simpson  
14 literature article is attached to this petition as Exhibit B.

15 The Commission will recall that James River is now  
16 installing, at a capital cost of \$20 million, process changes which  
17 will reduce substantially the generation of organochlorines  
18 measured as AOX. These changes include construction of a chlorine  
19 dioxide generator to effect substitution of chlorine dioxide for  
20 gaseous chlorine in the first bleaching stage, addition of hydrogen  
21 peroxide to the second bleaching stage and replacement of  
22 hypochlorite bleaching with chlorine dioxide in the third bleaching  
23 stage. James River is committed to these process changes, and each  
24 will contribute to reductions in organochlorines as measured by  
25 AOX.

26 The Simpson Mill makes different product lines from  
Wauna. For that reason, it is not certain that the Wauna Mill can

1 achieve the same chlorine dioxide substitution levels as Simpson  
2 without quality problems. The Simpson Mill also employs a  
3 different wastewater treatment system than does Wauna. For that  
4 reason also, it is unclear whether the Wauna Mill will be able to  
5 attain the same AOX discharge levels as the Simpson Mill.  
6 Nonetheless, Simpson's published results do show that AOX  
7 discharges of 1.5 kg/ADMT or less may be possible for a Northwest  
8 kraft mill without oxygen delignification or other major capital  
9 investments in addition to those which are already being made at  
10 the Wauna Mill.

11 IV.

12 **The AOX limit forces James River into**  
13 **a premature decision regarding the need**  
14 **for more capital investment.**

15 Bleaching equipment changes are extremely costly, and  
16 they require a lengthy period for engineering, installation and  
17 startup. If James River must install oxygen delignification or  
18 other additional major capital equipment in order to meet the 1.5  
19 kg/ADMT limit by the compliance date of November 1995, it must  
20 decide by late 1993 whether the project is necessary. A premature  
21 decision is a waste of resources, if it results in capital being  
22 needlessly spent.

23 The process changes now under construction will become  
24 operational by November 1992. This gives Wauna only one year to  
25 ascertain the effect of alternative process parameters on AOX  
26 discharges and to fine tune the changes which are currently being  
made. One year is inadequate for this time-consuming and complex

1 process. By way of comparison, Simpson installed its new bleaching  
2 sequence in 1988, but was still finding ways to reduce AOX in  
3 January 1991.

4 V.

5 **The AOX limit reduces James River's opportunity**  
6 **to investigate emerging low capital**  
7 **approaches to AOX reduction.**

8 The development of methods and technologies for reducing  
9 organochlorine discharges in the pulp and paper industry is rapidly  
10 expanding. For example, emerging low capital technologies such as  
11 treating pulp with lignin specific enzymes prior to bleaching or  
12 adjusting sewer conditions to promote decomposition of chlorinated  
13 compounds are proving to be effective in some instances. The tight  
14 time line under which James River must evaluate the effectiveness  
15 of its current investment and determine the need for further  
16 capital spending precludes the opportunity to find innovative, low  
17 cost ways to reduce AOX.

18 VI.

19 **The Commission is not legally obligated**  
20 **to include an AOX limit in the Wauna Mill permit.**

21 In its order dated April 16, 1992, the Commission  
22 concluded that Oregon is not required to impose permit limits on  
23 the discharge of organochlorines. The Commission also  
24 characterized as unpersuasive evidence offered to show that  
25 organochlorines discharged from the mills currently cause in-stream  
26 toxicity. The Commission did conclude that, as a matter of policy,  
"\*\*\*the presence of AOX in the mills' effluent is of regulatory

1 concern and should be addressed in the permits." (Final Order,  
2 p. 16) In this petition, James River is proposing that the  
3 Commission address AOX by including an AOX goal, rather than a  
4 limit, in the permit.

5 VII.

6 **AOX may not be the best parameter**  
7 **for use as a regulatory limit.**

8 James River has offered considerable testimony which  
9 shows that AOX is not a good choice for a regulatory limit because  
10 it does not focus on organochlorines which are of environmental  
11 significance. Tests which measure bioaccumulable organochlorines  
12 or compounds known to be toxic would be more appropriate, because  
13 those measurements would have environmental relevance. EPA is  
14 currently investigating alternative parameters for use in  
15 regulating organochlorine discharges as part of its effluent  
16 guidelines review process.

17 VIII.

18 **James River proposes a four**  
19 **part approach to regulating organochlorine discharges**  
20 **from the Wauna Mill.**

21 James River requests that, in view of the facts discussed  
22 above, the Commission reconsider the matter of how organochlorines  
23 from the Wauna Mill should be regulated. James River proposes that  
24 the AOX limits in the permit be replaced with the following  
25 regulatory requirements:

- 26 1. On or before November 15, 1992, the permittee shall  
install systems for bleaching capable of (a) achieving 70



- 1 - 100% chlorine dioxide substitution for gaseous chlorine  
2 in the first bleaching state, (b) eliminating  
3 hypochlorite bleaching through the use of chlorine  
4 dioxide, and (c) adding hydrogen peroxide reinforcement  
5 to the existing extraction bleach stage.
- 6 2. Upon completion of the modifications described in  
7 paragraph 1. above, the permittee, to the extent  
8 consistent with maintaining pulp quality, shall operate  
9 the modified bleaching sequence with the goal of  
10 discharging not more than 1.5 kg AOX per air dried metric  
11 ton of bleached pulp as an annual average.
- 12 3. Beginning May 15, 1993 and continuing every six months  
13 until expiration of the permit, the permittee shall  
14 submit to the Department a report which summarizes  
15 progress made toward meeting the 1.5 kg/ADMT AOX goal.  
16 The report shall include data on AOX discharges, percent  
17 chlorine dioxide substitution in the first bleaching  
18 stage, hydrogen peroxide use in the second bleaching  
19 stage, and any other data relevant to steps taken to  
20 reach the AOX goal.
- 21 4. In addition to weekly testing for AOX, the permittee  
22 shall test final treated effluent once per month for  
23 Extractable Organic Halogens (EOX), Extractable  
24 Persistent Organic Halogens (EPOX), and a screen for  
25 Polychlorinated Phenolics. The tests shall be made on  
26 the same sample which is tested for AOX, and the results

1 shall be submitted as part of the semi-annual progress  
2 report described in paragraph 3. above.  
3 The net effect of this proposal is to replace the 1.5 kg/ADMT  
4 annual average AOX limit which becomes effective in November 1995  
5 with a 1.5 kg/ADMT annual average AOX goal which becomes effective  
6 in November 1992. The proposal continues to focus regulatory  
7 attention on organochlorine reduction, and it requires that James  
8 River work diligently at minimizing AOX throughout the life of this  
9 permit. It also provides data on discharges of specific groups of  
10 organochlorines which may be more environmentally relevant than the  
11 AOX parameter.

12 IX.

13 **James River's proposal is consistent**  
14 **with other regulatory initiatives.**

15 Establishing an AOX goal, rather than a limit, of  
16 1.5 kg/ADMT is consistent with the regulatory approach which DEQ  
17 has taken towards Pope and Talbot. Pope and Talbot's mill in  
18 Halsey agreed to a series of technology changes to be made between  
19 1993 and 1997, with a goal of 1.5 kg/ADMT (annual average) to be  
20 met by December 31, 1997.

21 EPA is currently revising effluent guideline limits for  
22 bleached kraft pulp mills. The Agency is scheduled to propose new  
23 guidelines in 1993 and promulgate new guidelines by the end of  
24 1995. EPA is studying whether or not organochlorine limits should  
25 be included and, if so, what regulatory parameters would be  
26 appropriate for inclusion in the revised guideline limits.

1 The Wauna Mill permit expires on November 30, 1995. At  
2 that time, The Commission will have a clear view of the progress  
3 which James River has made toward reaching the 1.5 kg/ADMT AOX  
4 goal. The Commission will also gain the benefit of EPA's  
5 determination of an appropriate strategy for regulating  
6 organochlorine discharges from pulp mills nationwide.

7 X.

8 SUMMARY

9 James River petitions the Commission for reconsideration  
10 or rehearing of its decision to include a 1.5 kg/ADMT AOX limit in  
11 the Wauna Mill permit. In lieu of a limit which becomes effective  
12 in November 1995, James River proposes a four part strategy which  
13 requires the mill to aggressively pursue a 1.5 kg/ADMT goal,  
14 beginning in November 1992. James River's proposal focuses  
15 regulatory attention on organochlorine reduction. It also provides  
16 time for a full exploration of those process options which can be  
17 implemented at Wauna without the premature commitment of  
18 unnecessary capital beyond the \$20 million which is already being  
19 spent. Recent evidence from an operating mill in the Northwest has  
20 shown that the Commission's objective of 1.5 kg AOX/ADMT may be  
21 achievable through fine tuning of the process changes which are  
22 currently being installed at the Wauna mill.

23 RESPECTFULLY SUBMITTED this 11<sup>th</sup> day of June, 1992.

24 LANE POWELL SPEARS LUBERSKY

25 By Richard H. Williams  
26 Richard H. Williams

PAGE 9 - PETITION BY JAMES RIVER II, INC. FOR RECONSIDERATION OR  
REHEARING

LANE POWELL SPEARS LUBERSKY

SUITE 800  
520 SW Yamhill Street  
Portland, Oregon 97204-1383  
(503) 226-6151

# APPENDIX A

## WASHINGTON LEGISLATION

**West's**  
**WASHINGTON**  
**LEGISLATIVE SERVICE**

**1992**

**Fifty-Second Legislature**  
**1992 Regular Session**

**Convened January 13, 1992**  
**Adjourned March 12, 1992**

**Chapters 174 to 212**

**WEST PUBLISHING CO.**  
**ST. PAUL, MINN.**

Sec. 1. RCW 46.55.140 and 1991 c 20 s 2 are each amended to read as follows:

(1) A registered tow truck operator who has a valid and signed impoundment authorization has a lien upon the impounded vehicle for services provided in the towing and storage of the vehicle, unless the impoundment is determined to have been invalid. The lien does not apply to personal property in or upon the vehicle that is not permanently attached to or is not an integral part of the vehicle. The registered tow truck operator also has a deficiency claim against the registered owner of the vehicle for services provided in the towing and storage of the vehicle not to exceed the sum of three hundred dollars less the amount bid at auction, and for vehicles of over ten thousand pounds gross vehicle weight, the operator has a deficiency claim of one thousand dollars less the amount bid at auction, unless the impound is determined to be invalid. The limitation on towing and storage deficiency claims does not apply to an impound directed by a law enforcement officer. In no case may the cost of the auction or a buyer's fee be added to the amount charged for the vehicle at the auction, the vehicle's lien, or the overage due. A registered owner who has completed and filed with the department the seller's report as provided for by RCW 46.12.101 and has timely and properly filed the seller's report is relieved of liability under this section. The person named as the new owner of the vehicle on the timely and properly filed seller's report shall assume liability under this section.

(2) Any person who tows, removes, or otherwise disturbs any vehicle parked, stalled, or otherwise left on privately owned or controlled property, and any person owning or controlling the private property, or either of them, are liable to the owner or operator of a vehicle, or each of them, for consequential and incidental damages arising from any interference with the ownership or use of the vehicle which does not comply with the requirements of this chapter.

Approved April 2, 1992.

Effective June 11, 1992, 90 days after date of adjournment.

## WATER POLLUTION—PULP AND PAPER MILLS—CHLORINATED ORGANIC COMPOUND EMISSIONS

### CHAPTER 201

S.S.B. No. 5724

AN ACT Relating to water pollution control of chlorinated organic compound emissions; and adding a new section to chapter 90.48 RCW.

*BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:*

NEW SECTION. Sec. 1. A new section is added to chapter 90.48 RCW to read as follows:

(1) The department may require each pulp mill and paper mill discharging chlorinated organics to conduct and submit an engineering report on the cost of installing technology designed to reduce the amount of chlorinated organic compounds discharged into the waters of the state. The department shall allow at least twenty-four months from the effective date of this act for each pulp mill and each paper mill to submit an engineering report.

(2) The department may not issue a permit establishing limits to the discharge of chlorinated organic compounds by a pulp mill or a paper mill under RCW 90.48.160 or 90.48.260 until at least nine months after receiving an engineering report from a kraft mill and at least fifteen months after receiving an engineering report from a sulfite mill.

(3) Nothing in this section shall apply to dioxin compounds.

Approved April 2, 1992.

Effective June 11, 1992, 90 days after date of adjournment.

# **APPENDIX B**

## **SIMPSON MILL REPORT**

**SIMPSON TACOMA KRAFT COMPANY  
OPERATES DIOXIN FREE WITH  
HIGH % ClO<sub>2</sub> SUBSTITUTION**

Don Johnson  
Production Manager  
Simpson Tacoma Kraft Co.  
Tacoma, WA

Stacie Hashimoto  
Process Engineering Supt.  
Simpson Tacoma Kraft Co.  
Tacoma, WA

Mark Minday  
Sr. Process Engineer  
Eka Nobel Inc.  
Marietta, GA

**ABSTRACT**

Simpson Tacoma Kraft Company is located on Puget Sound near Tacoma, Washington. This is an environmentally sensitive area for both air and water emissions. Also, Simpson exports market pulp to customers which require nondetectable dioxins in the pulp. With both environmental and market constraints, the mill pursued replacing molecular chlorine (Cl<sub>2</sub>) with chlorine dioxide (ClO<sub>2</sub>) in the first bleach stage of a three stage bleach plant, DC-EO-D, to reduce the formation of dioxins (TCDD/Fs) and chlorinated organics. Various levels of ClO<sub>2</sub> substitution were tried, ranging from 15% to 100% substitution.

At 85% ClO<sub>2</sub> substitution, the mill was able to produce dioxin (TCDD/F) free fully bleached market pulp with improved effluent quality. The TCDD/Fs were essentially nondetectable in the bleach plant effluents, while the amount of AOX in the final effluent, after secondary treatment, was less than 1.5 kg/tp. The mill has made 100% ClO<sub>2</sub> substitution production runs or Cl<sub>2</sub> free runs which resulted in an AOX of 0.6 kg/tp after secondary treatment. Hydrogen peroxide was used during some runs in the EO stage, which improved the stability of the bleaching operation and was necessary for achieving 87-88% GE brightness at 100% substitution.

**KEYWORDS**

Chlorine dioxide, bleaching, effluents, AOX, chlorinated dioxins, chlorinated furans, pulp.

**INTRODUCTION**

Simpson Tacoma Kraft Company in Tacoma, Washington, has made large strides in recent years to improve product quality, while reducing the mill's environmental impact. In 1936, the mill started up the first continuous bleach plant in the U.S., C-C<sub>4</sub>-E-H-H, producing 180 TPD of bleached kraft pulp. In the 1980's, the bleach plant was modified to a C-EO-H-H bleaching sequence and changed from calcium to sodium based hypochlorite. This sequence produced a pulp exhibiting low strength, limited brightness (80% GE), and excessive brightness reversion characteristics.

In 1988, Simpson installed a short sequence bleach plant, DC-EO-D, with the following objectives: increase bleached pulp strength by 40%, raise pulp brightness to 85% GE, reduce brightness reversion, increase bleached pulp production to 450 ADMT/day (500 ADMT/day, max.), decrease mill water use by 1 million gal./day, and significantly reduce emissions of chloroform and chlorinated organics.

In 1990, Simpson took another step to demonstrate its commitment to reducing the environmental liability of the Tacoma mill by performing high ClO<sub>2</sub> substitution trials in May and June. This led to the current mode of operation - 85% and 100% ClO<sub>2</sub> substitution in the first bleach stage.

**MILL DESCRIPTION**

Simpson Tacoma Kraft Company is located adjacent to downtown Tacoma, 30 miles south of Seattle on Commencement Bay in the Puget Sound. The company has invested \$5 million to clean the sludge accumulation around the mill from its 1929-era plant and create a suitable habitat for salmon migration and other local wildlife. In addition, the mill outfall has been extended into Puget Sound. Overall, the mill is in a sensitive location for air and water emissions because of growth in the metropolitan Seattle-Tacoma area over the past 50 years.

Simpson has three fiber lines with a no. 1 line utilizing 6 batch digesters, producing 410 ADMT/day of unbleached pulp, while the no. 2 and no. 3 lines each use Kamyr digesters and produce a total of 860 ADMT/day of unbleached pulp. The wood furnish for all pulping lines is typically 50% coastal Douglas fir and 50% coastal western hemlock. The product line includes mottled white and natural kraft linerboard from the larger machine (242" wide trim, Beloit), while the smaller machine (162" wide trim, P&J) produces unbleached and bleached grades ranging from 35 lb. grocery sack to 42 lb. linerboard and various grades and weights in between. Approximately 815 ADMT/day of paper products are made on the two paper machines, while about 270 ADMT/day of fully bleached and natural market pulp are produced on two pulp machines.



The effluent treatment system includes a 225' clarifier for primary treatment and a UNOX activated sludge system for secondary treatment. This uses molecular oxygen, which is supplied via an 80 ton oxygen generation plant. Sludge from primary and secondary treatment is burned in a hog fuel boiler to produce process steam.

The remaining mill description focuses on the no. 1 fiber line, which contains the short sequence bleach plant. Following the six batch digesters are a new screen room and a new brownstock washer, a Black Clawson Chemi-Washer™. This equipment started up in January of 1991. Prior to this, an ancient brownstock washer line and screen room were utilized, which gave both high and variable amounts of black liquor carryover. All the data for this article was taken while the old washer line was in operation.

After the brownstock is washed and screened, it is transferred to a 250 ton high density storage chest. From there the stock is diluted with filtrate from the DC stage to 3.5 - 5% consistency and pumped to the consistency chest (see Figure 1). Pulp from this chest is further consistency controlled with trim dilution before entering the first of two high-shear mixers. The time delay between the two mixers for sequential addition of ClO<sub>2</sub> and Cl<sub>2</sub> is 30 seconds. Next, the pulp is pumped to the upflow chlorination tower for 30-40 minutes of retention time. This tower discharges into a launder ring that feeds a Beloit-Rauma rotary drum Pro-feed pressure washer (two stage).

Caustic is added to the pulp as it discharges from the chlorination washer-repulper into the standpipe of a medium consistency (MC) pump. Steam is added to the standpipe for temperature control. If hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) is used, it is mixed with the pulp through the MC pump. The pump is followed by a high-shear mixer where oxygen is mixed with the pulp before entering the upflow leg of the extraction tower. After 1.5 hours in the upflow-downflow tower, the medium consistency pulp is diluted to 3.5% consistency and pumped to another two stage Pro-feed washer.

Caustic is then added to the pulp as it discharges the washer, and enters the MC pump standpipe where steam is injected to heat the stock. The MC pump feeds another high-shear mixer, where ClO<sub>2</sub> is mixed with the pulp. This pulp is sent to D stage upflow-downflow tower, having 4 hours of retention time. Subsequently, the pulp is diluted to 3.5% consistency and sent to the D stage washer, a single stage Pro-feed washer. Sulfur dioxide is added to control ClO<sub>2</sub> residual in the stock feeding this washer. Pulp from this washer is sent to a 250 ton high density storage chest for use on the paper or pulp machines. For a more detailed description of the bleach plant, refer to Klein's article (1).

#### MILL EXPERIENCE

It has been well documented that replacing molecular chlorine (Cl<sub>2</sub>) with ClO<sub>2</sub> in the first bleach stage (50%+) significantly reduces: AOX (adsorbable organic halogens), 2,3,7,8 tetrachloro - dibenzo - p - dioxins and furans (TCDD/Fs), and chlorinated phenolic compounds (2 - 6). There are several basic approaches to reducing the amount and type of chlorinated organics formed in the bleach plant (7). Most involve a method for lowering the use of molecular Cl<sub>2</sub>. These include: extended delignification, oxygen delignification, improved brownstock washing, decreased Cl<sub>2</sub> charge, increased ClO<sub>2</sub> substitution, split Cl<sub>2</sub> addition, improved process control, and optimized process conditions (pH, temperature, and % consistency).

Simpson approached their goal of reducing chlorinated organics by two means:

- (1) decrease the molecular chlorine by using high ClO<sub>2</sub> substitution, and
- (2) improve brownstock washing by replacing the old, unpredictable washer line with a state-of-the-art washing system.

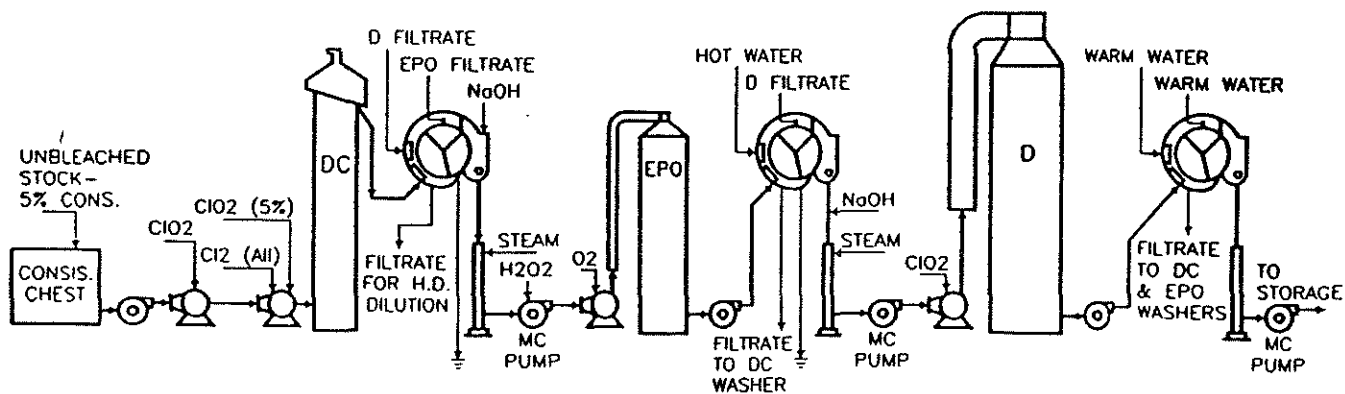


FIGURE 1 - SIMPSON TACOMA BLEACH PLANT FLOW DIAGRAM

Item (2), was accomplished by putting in a Chemi-Washer™, which yields a soda loss of less than 5 kg Na<sub>2</sub>SO<sub>4</sub>/tp. The effect of improved washing will not be shown in this article, since all of the data was taken with the old washer line in operation. Extended delignification and oxygen delignification were not considered due to their significant capital costs and the effect on recovery capacity. Thus, the focus of this work was on reducing the use of molecular chlorine via high ClO<sub>2</sub> substitution which lowered key chlorinated organics in the effluent and in the pulp. Even though much TCDD and TCDF data was collected, the "yardsticks" used to measure a reduction in chlorinated organics were:

- (1) AOX in the effluent (after secondary treatment) and,
- (2) TCDD/F in the bleach plant effluents and in the bleached pulp off the D-washer.

The AOX measurements taken were performed on the decanted liquid only according to Method 506 of Standard Methods for the Examination of Water and Wastewater, 16th Edition (8). AOX is understood as the gross indicator of the chlorinated organic content of wastewater. Thus, AOX results alone do not measure the environmental significance of any reductions caused by ClO<sub>2</sub> substitution. However, measuring the effect ClO<sub>2</sub> substitution has upon reducing specific chlorinated compounds, which are considered toxic or possibly carcinogenic (e.g., TCDD/F), is a viable way to track success. Once a relationship between AOX and key chlorinated compounds is developed

for a given mill, then the relatively simple test, AOX, can be used to measure the true impact of a given process modification.

Before discussing the mill results, it is important to define terms which are used in this report.

1. Charge Factor (CF) =  $\frac{\text{Total act. chlorine in kg/tp}}{\text{brownstock kappa no.}}$  for DC Stage
2. Molecular Chlorine Multiple =  $\frac{\text{wt. \% Cl}_2 \text{ applied in DC Stage}}{\text{brownstock kappa no.}}$
3. Elemental Chlorine (Cl) =  $\text{Cl}_2 + \frac{\text{ClO}_2 (\text{Act. Cl}_2)}{5}$  (kg/tp) in DC Stage
4. Percentage of D (% D) = the percentage of total active chlorine in the DC stage which is ClO<sub>2</sub>
5. Estimate of AOX = 0.1 (Elemental Chlorine) (kg/tp) formed (9)

#### Various Levels of % D Without H<sub>2</sub>O<sub>2</sub>

The data for this portion of the work was taken from April 1989 to May 1990, and covered a full range of % ClO<sub>2</sub> substitution, 15 to 100% D. No H<sub>2</sub>O<sub>2</sub> was used in the EO stage during this portion of the mill trials. Tables 1, 2, 3, and 4 show the environmental data, primary operating

**TABLE 1 - AOX & 2,3,7,8-TCDD/F RESULTS for EACH LEVEL of ClO<sub>2</sub> SUBSTITUTION**

BLEACHING SEQUENCE	AOX kg per ADMT (bl.) [1]	DIOXIN DATA (2,3,7,8-TCDD)							FURAN DATA (2,3,7,8-TCDF)						
		B.P. ACID SEWER (ppq)	B.P. ALKAL. SEWER (ppq)	D WASHER PULP (ppt)	PULP MACH. (ppt)	PAPER MACH. (ppt)	SEC. TREAT. [2] (ppq)	SLUDGE [3] (ppt)	B.P. ACID SEWER (ppq)	B.P. ALKAL. SEWER (ppq)	D WASHER PULP (ppt)	PULP MACH. (ppt)	PAPER MACH. (ppt)	SEC. TREAT. [2] (ppq)	SLUDGE [3] (ppt)
<b>WITHOUT H<sub>2</sub>O<sub>2</sub></b>															
(C85+D15)(EO)D	5.20	77.0	450.0	26.0	-	-	-	-	780.0	4,200	318.0	-	-	-	-
(D30C70)(EO)D	3.50	40.0	400.0	14.0	-	-	-	-	270.0	1,600	53.0	-	-	-	-
(D40C60)(EO)D	3.80	48.0	490.0	13.0	-	-	13.0	-	160.0	1,300	42.0	-	-	51.0	-
(D50C50)(EO)D	2.90	45.5	300.0	8.05	12.0	11.0	13.0	110.0	131.0	675.0	21.5	41.0	40.0	41.5	150.0
(D75C25)(EO)D	2.30	17.4	41.5	*2.05	0.49	0.67	ND	19.7	*8.6	*26.0	*1.06	0.60	1.18	11.9	55.3
D100(EO)D	0.60	ND	ND	ND	-	ND	*7.9	19.5	ND	5.70	ND	-	0.25	17.0	71.0
<b>WITH H<sub>2</sub>O<sub>2</sub></b>															
(D75C15)(EPO)D	2.26	14.1	28.0	*1.20	-	*2.3	*9.0	19.5	16.5	29.5	3.9	-	*14.2	*28.0	59.5
(D85C15)(EPO)D	1.26	*13.0	ND	ND	ND	ND	ND	4.6	ND	*8.2	ND	ND	1.55	16.0	34.0
D100(EPO)D	0.61	ND	ND	ND	ND	ND	6.0	7.0	*6.8	ND	ND	ND	ND	25.7	38.3

[1] - In effluent after secondary treatment. AOX measurement was performed on decantant only according to Standard Methods for the Examination of Water and Wastewater, 16th Edition, Method 506 "Organic Halogen (Total) Adsorption-Pyrolysis-Titrimetric Method (Tentative)", Microcolumn (4a) Method.

[2] - In effluent after secondary treatment.

[3] - Primary & secondary sludge burned in a hog fuel boiler; estimated at 30 TPD & at 40 % solids.

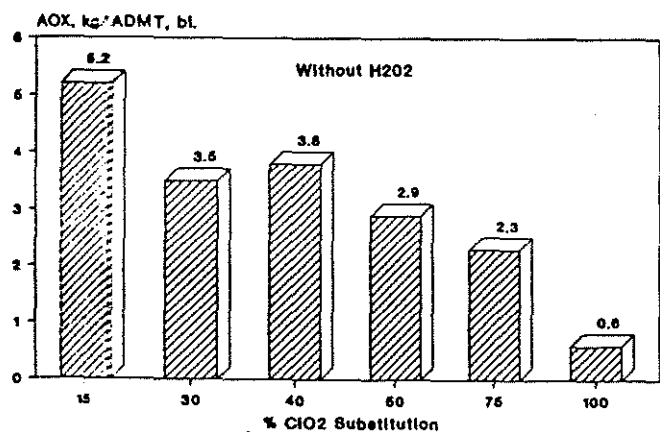
\* - At least one of the collected samples was determined to be nondetectable (ND).

conditions, bleaching costs, and pulp quality results for the different levels of % D. The top portion of each of these tables lists the results of ClO<sub>2</sub> substitution when no H<sub>2</sub>O<sub>2</sub> was used, while the lower portion of each table lists the % D results when H<sub>2</sub>O<sub>2</sub> was used. Table 2 shows the number of days of operational data which were averaged and used in the tables and in the figures. The environmental data taken for each level of % D did not extend the whole period in which the operational data was taken. There were only 1 to 3 sets of environmental data per level of % D studied. The reference mode of operation for this work is 15% D.

The convention used for expressing the addition and amounts of ClO<sub>2</sub> and Cl<sub>2</sub> to the first bleach stage generally follows the TAPPI recommended practice (TIS 0606-21). Above 15% D, ClO<sub>2</sub> was added 30 seconds prior to Cl<sub>2</sub>, while at 15% D, ClO<sub>2</sub> and Cl<sub>2</sub> were mixed simultaneously with the pulp. For the sequential addition (DC), 5% of the ClO<sub>2</sub> demand was mixed with the Cl<sub>2</sub> in the second mixer for pulp viscosity protection (see Figure 1). The optical/residual sensor is located 20 seconds downstream from this mixer.

Figures 2, 3, and 4 show the effect various levels of ClO<sub>2</sub> substitution have upon AOX in the effluent, after secondary treatment, and upon TCDD/F in the bleach plant effluents. Table 1 also contains this data. Figure 2 shows the large decrease in the mill's AOX as a result of substituting ClO<sub>2</sub> for Cl<sub>2</sub> gas in the DC stage. At 50% substitution the AOX dropped from 5.2 to 2.9 kg/ADMT, a 44% decrease. To fully replace Cl<sub>2</sub> with ClO<sub>2</sub> the AOX was reduced by 88%, from 5.2 to 0.6 kg/ADMT.

Figure 2. Effect of % ClO<sub>2</sub> Substitution on AOX After Secondary Treatment



To further define the effect reduced AOX had upon potentially harmful chlorinated organic compounds in the bleach plant effluents, the acidic and alkaline effluents from the bleach plant were sampled and tested for TCDD/F concentrations (Figures 3 and 4, Table 1). As predicted from previous studies and confirmed during these mill trials (10):

- (1) The alkaline effluent contained 2 to 5 times the amount of TCDD/F than what was found in the acid effluent. This was true for all levels of substitution.
- (2) The furans (2,3,7,8-TCDF) were much more abundant, 2 to 10 times greater for 15 to 50% substitution, than the dioxins (2,3,7,8-TCDD). This was true for both the alkaline and acid effluents.

In Figures 3 and 4, no distinction was made between data taken with or without H<sub>2</sub>O<sub>2</sub> in the EO stage since the differences are indistinguishable. Dioxins (TCDD) were lowered by 90% in the alkaline effluent at 75% ClO<sub>2</sub> substitution (Figure 3). For furans (TCDF) the concentration in the alkaline effluent decreased by 62% when going from 15 to 30% ClO<sub>2</sub> substitution (Figure 4). For TCDD and TCDF in the bleach plant acid effluent the changes in the TCDD/F concentrations were not as dramatic as in the alkaline effluent. For both bleach plant effluents the dioxins and furans (TCDD/F) were essentially nondetectable at 85% D and above.

Figure 3. Dioxin Reduction in Bleach Plant Effluents with ClO<sub>2</sub> Substitution

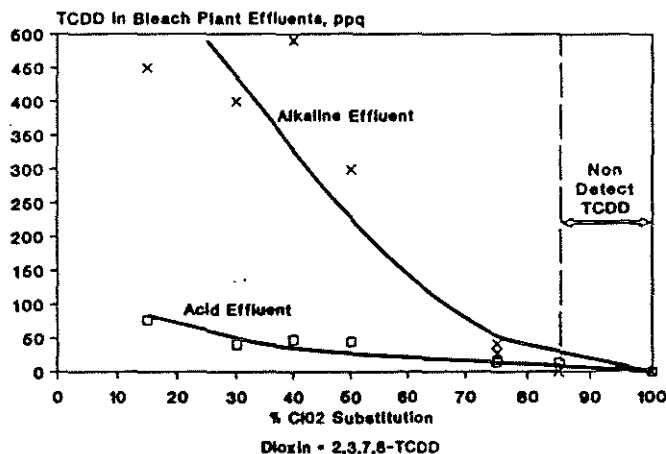
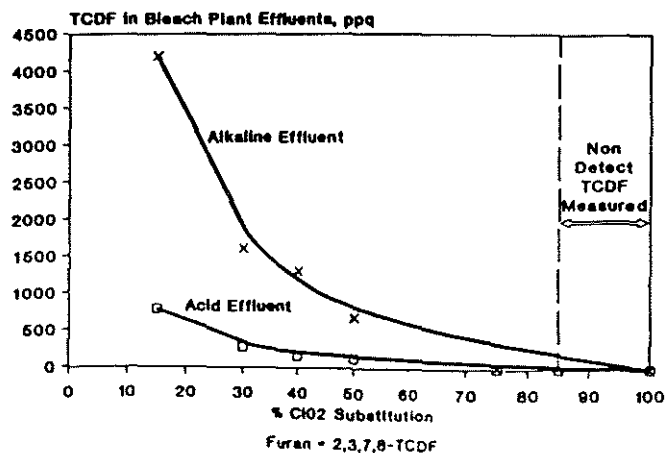
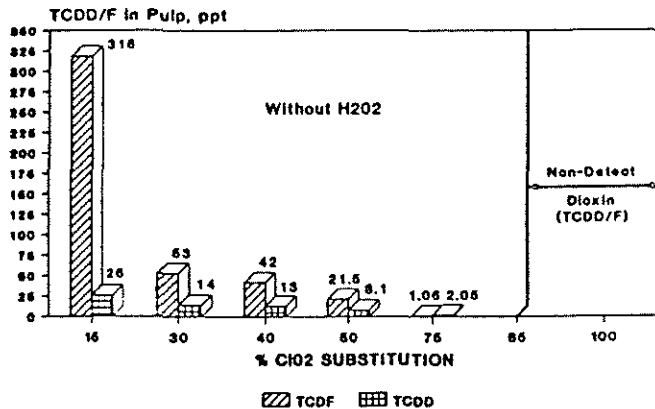


Figure 4. Furan Reduction in Bleach Plant Effluents with ClO<sub>2</sub> Substitution



DD/F was also measured in the pulp off the final D-asher (Figure 5). As was true with the bleach plant effluents, the TCDF concentrations were much greater in the pulp than the TCDD concentrations, especially for 15 to 50% D. At 75% D both TCDD/F were very low, 1-2 ppt, while they were nondetectable at 85% D and above. Therefore, the nondetectable TCDD/F zone for both the bleach plant effluents and the fully bleached pulp begins at the 85% ClO<sub>2</sub> substitution level.

Figure 5. Effect of % ClO<sub>2</sub> Substitution on TCDD/F in Bleached Pulp



The TCDD/F concentrations in fully bleached pulp, at different levels of ClO<sub>2</sub> substitution, were plotted against corresponding AOX data. Figure 6 shows the relationship for TCDD in pulp versus AOX. This figure shows a huge drop in TCDD between an AOX of 5 and 2.5 kg/ADMT. Dioxins were found nondetectable in the pulp when the measured AOX in the treated secondary effluent was 1.5 kg/ADMT or below. Figure 7 shows the same information as Figure 6 except it relates TCDF in pulp to AOX. The TCDF dropped off sharply at an AOX of about 3.6 kg/ADMT. Furans were also nondetectable at an AOX of 1.5 kg/ADMT.

Figure 6. Relationship Between 2,3,7,8-TCDD in Pulp & AOX in Effluent

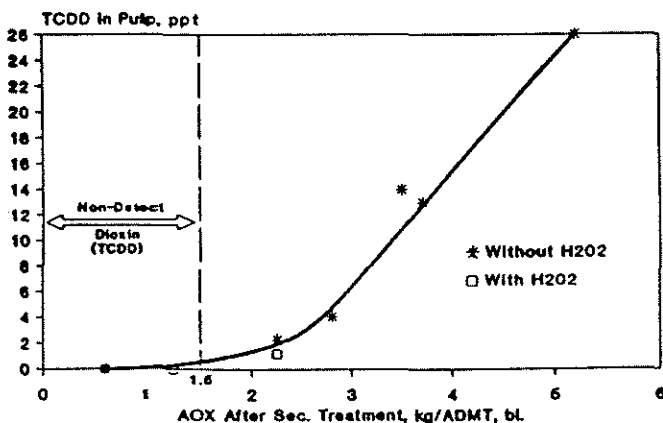
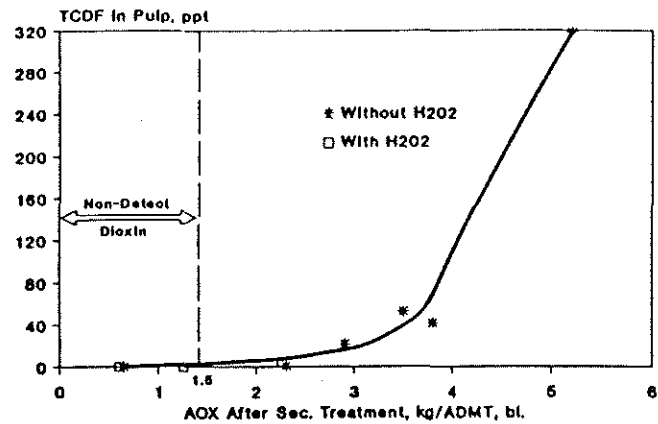
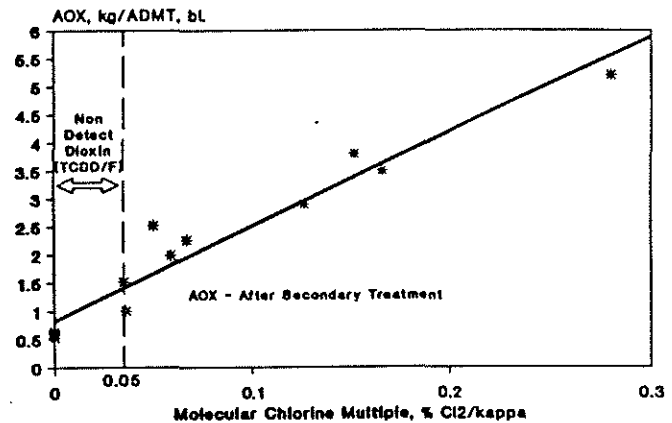


Figure 7. Relationship Between 2,3,7,8-TCDF in Pulp & AOX in Effluent



If this same information is viewed in terms of AOX versus molecular chlorine multiple (MCM), the nondetectable TCDD/F region for bleach plant effluent and bleached pulp is at 0.05 MCM and below. This corresponds to about 85% D without the use of H<sub>2</sub>O<sub>2</sub> (see Table 3 and Figure 8). Thus, the Tacoma mill must operate at 85% D or above to ensure a dioxin (TCDD/F) free operation.

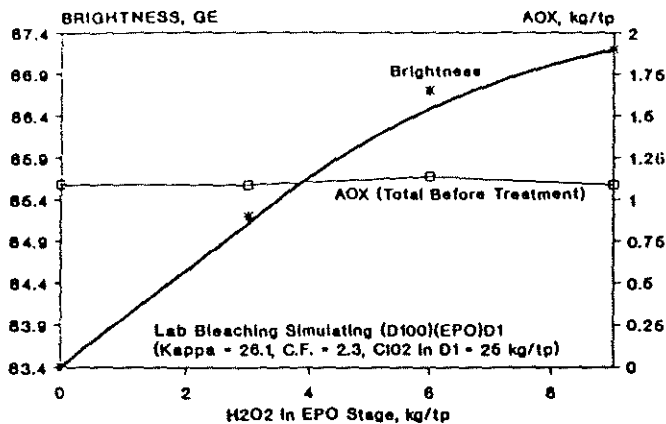
Figure 8. Effect of Molecular Chlorine (Cl<sub>2</sub>) Applied on AOX



### H<sub>2</sub>O<sub>2</sub> With High Levels of % D

After performing the 100% trial in May 1990, Simpson consulted with Eka Nobel Inc. in Atlanta to determine how to optimize their bleaching conditions for 100% D. In addition, Eka Nobel did lab work which closely simulated Simpson's bleaching conditions, both with and without H<sub>2</sub>O<sub>2</sub> in the EO stage. Figure 9 shows some basic results of this work. The H<sub>2</sub>O<sub>2</sub> charge was varied in the EO stage from 3.0 to 9.0 kg/tp while the chemical charges in the EO and D1 stages were kept constant. The final brightness increased as the H<sub>2</sub>O<sub>2</sub> charge increased, while the AOX stayed constant. This is due to more delignification and pulp brightening occurring with the H<sub>2</sub>O<sub>2</sub>.

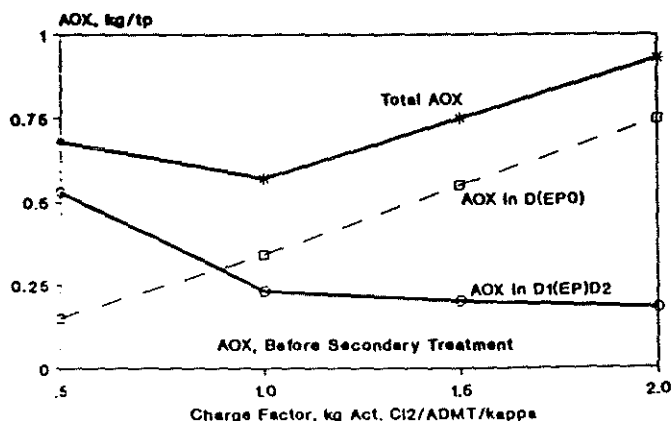
Figure 9. Final Brightness & AOX at Various H<sub>2</sub>O<sub>2</sub> Charges in EPO Stage



In June 1990, the mill started applying H<sub>2</sub>O<sub>2</sub> to the EO stage. Various high levels of % D (75, 85, & 100) were tried in conjunction with the new EPO stage from June 1990 to January 1991. In Table 1, the AOX looks the same for the 75% D with or without H<sub>2</sub>O<sub>2</sub>. The same is true for the 100% D case. The 75% D case without H<sub>2</sub>O<sub>2</sub> was higher in dioxins (TCDD/F) in bleach plant effluents and bleached pulp than when using H<sub>2</sub>O<sub>2</sub>. TCDD/Fs were nondetectable at 85% D and 100% D. With these results, the mill has decided to operate at 85% D with H<sub>2</sub>O<sub>2</sub> to ensure a dioxin free operation.

With the use of H<sub>2</sub>O<sub>2</sub> in the EPO stage the DC stage charge factor was lower than before or less active chlorine was applied (see Table 3). This also means less elemental chlorine (Cl) was applied, which should have resulted in less AOX formed (9). Basta, et al, have studied the use of H<sub>2</sub>O<sub>2</sub> in the EO stage to lower the charge factor (11,12). These results are shown in Figure 10. The minimal AOX measured was at a charge factor of 1.0. Although this was done on an oxygen prebleached pulp, in a D-(EO)-D-E-D bleaching sequence, the same principle holds true for any

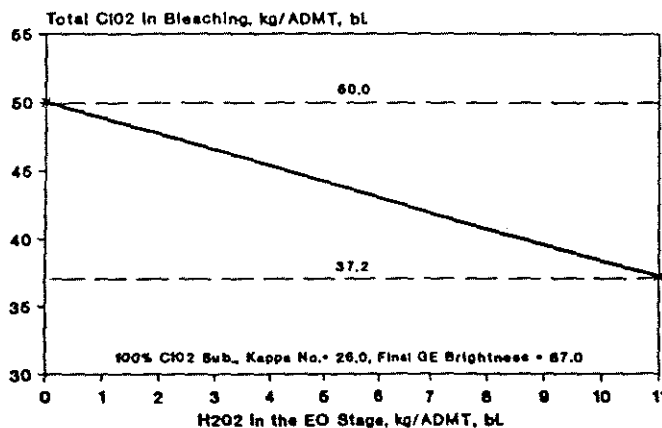
Figure 10. AOX Discharge as a Function of Charge Factor



bleach plant - lower elemental chlorine on the first stage results in lower AOX. To go to a lower charge factor with H<sub>2</sub>O<sub>2</sub> for equivalent brownstock and DC kappa numbers, more of the delignification shifts from the first stage to the EPO stage. Here a nonchlorine chemical picks up the additional delignification load, resulting in less chlorinated organic compounds formed.

The reasons why the lower charge factors (using H<sub>2</sub>O<sub>2</sub>) did not result in lower AOX are not fully understood. Optimization of the brownstock washer and other mill modifications are expected to resolve this apparent inconsistency. The most important contribution H<sub>2</sub>O<sub>2</sub> had on the 100% D runs was that it made it possible to achieve market pulp final brightness (87% GE). This was about one point higher in brightness than the 100% D trial without H<sub>2</sub>O<sub>2</sub>. It was also observed at 100% D runs that 1 kg of H<sub>2</sub>O<sub>2</sub> applied to the EPO stage displaced 1.2 kg of ClO<sub>2</sub> in the entire bleach plant. This is shown in Figure 11, which is corrected for variations in brownstock kappa number.

Figure 11. Effect of H<sub>2</sub>O<sub>2</sub> in the EO Stage on Total ClO<sub>2</sub> Used (D100 + D)

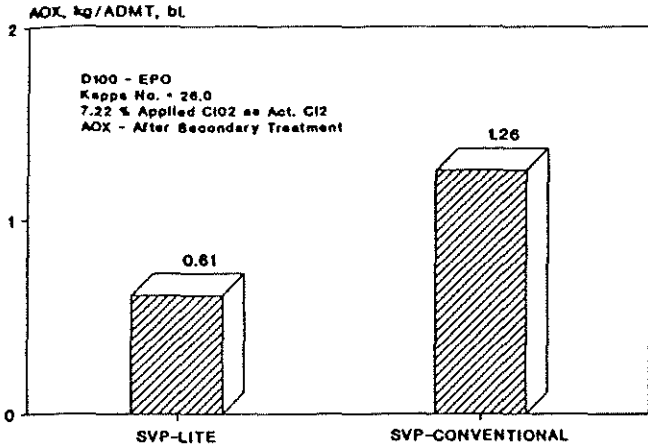


#### Impact of the ClO<sub>2</sub> Process Used

The ClO<sub>2</sub> process selected has an impact on the AOX generated from a bleach plant, especially for high ClO<sub>2</sub> substitution levels, where large quantities of ClO<sub>2</sub> are used in the first bleach stage. Simpson selected Eka Nobel's methanol based ClO<sub>2</sub> process, SVP-LITE™, over the conventional ClO<sub>2</sub> process which uses sodium chloride (i.e., SVP® or R-3). The SVP-LITE™ process contains essentially no Cl<sub>2</sub> in the ClO<sub>2</sub> solution, while the conventional process contains 1.9 gpl Cl<sub>2</sub> for a 10 gpl ClO<sub>2</sub> solution with an additional by-product Cl<sub>2</sub> of 0.42 kg per kg of ClO<sub>2</sub>. With this high level of Cl<sub>2</sub> in the ClO<sub>2</sub> solution and the Cl<sub>2</sub> by-product for the conventional process, a bleach plant can never operate higher than about 81-82% D. This includes Cl<sub>2</sub> water made as a by-product and applied to the first bleach stage. With a low amount of Cl<sub>2</sub> in ClO<sub>2</sub> solution from a traditional methanol based process, the highest % ClO<sub>2</sub> substitution possible is 98-99%. Figure 12 shows

that the measured amount of AOX is reduced by more than 50% when using the SVP-LITE™ process, for 100% D with H<sub>2</sub>O<sub>2</sub> in the EO stage. This assumes the measured AOX for 85% D is the same for 81-82% D.

Figure 12. Effect of ClO<sub>2</sub> Process on AOX



The ClO<sub>2</sub> plant at Simpson is designed to operate at 16 TPD and has run as high as 22 - 24 TPD. ClO<sub>2</sub> production is limited to 12 - 14 TPD in the warmer months, since the only source of chilled water for making ClO<sub>2</sub> solution is city water. This runs about 60°F in the summer. After the % D trials were complete, Simpson installed a chiller unit, which now allows the no. 1 fiber line to operate 100% D at design capacity.

**Bleaching Costs**

Bleaching costs have been evaluated for various levels of % D on the lab scale (13) as well as the mill scale (10,14). Most evaluations are for four to five stages of bleaching, some using oxygen delignification before bleaching. There has been little work done to evaluate the bleaching costs for various levels of % D for a three stage bleach plant like Simpson's.

The bleaching conditions are shown in Table 2 while the chemical charges and bleaching costs are shown in Table 3. Also the results of the actual and predicted relative bleaching cost for all the ClO<sub>2</sub> substitution runs are shown in Figures 13 and 14. The actual relative bleaching cost is the cost of bleaching chemicals, corrected for brownstock kappa no. variations. The predicted relative bleaching cost is for the projected optimized condition with well washed brownstock. This cost is corrected for brownstock kappa no. variations, along with adjustments to the caustic and H<sub>2</sub>O<sub>2</sub> used in the EO stage and ClO<sub>2</sub> used in the final stage. The 15% D cost is the reference for all comparisons.

Figure 13 shows the relative bleaching costs for 15% to 100% ClO<sub>2</sub> substitution when H<sub>2</sub>O<sub>2</sub> was not used. For 15 - 50% D, there is essentially no increase in bleaching cost. Above 50% D, the bleaching cost rises to a maximum at

100% D. These results are similar to Axegard's for a five stage bleaching sequence (13). To operate dioxin free at 85% D, the actual cost shows about a 50% increase over the reference, while the predicted cost is about 30% over the 15% D case. To operate Cl<sub>2</sub> free, without H<sub>2</sub>O<sub>2</sub>, the actual cost was 78% more than the reference cost, whereas the predicted cost shows only a 38% increase. The reasons for such a large difference between the actual and predicted costs for 100% D are not fully understood. Some of the contributing factors include: poor brownstock washing, unoptimized bleaching conditions, and lack of brightness development in a three stage bleach plant when not using H<sub>2</sub>O<sub>2</sub>.

Figure 13. Relative Bleaching Cost for Various Levels of %D (Without H<sub>2</sub>O<sub>2</sub>)

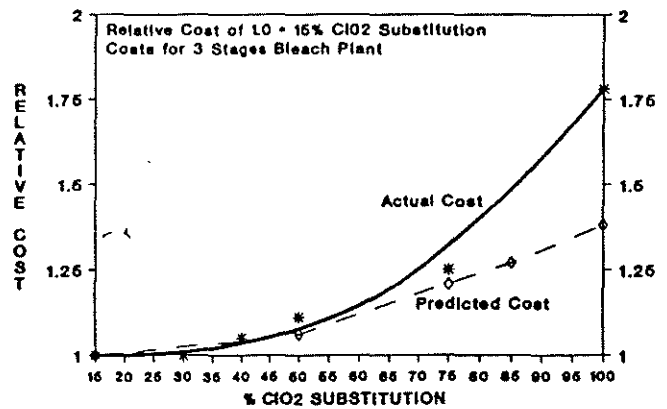


Figure 14. Relative Bleaching Cost for Various Levels of %D (With H<sub>2</sub>O<sub>2</sub>)

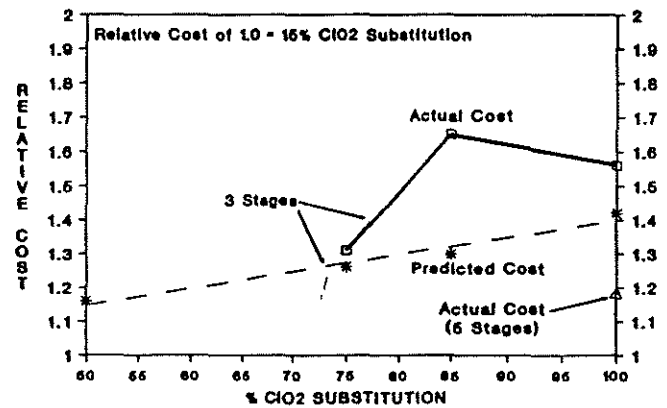


Figure 14 shows the relative bleaching costs for 50% D to 100% D when H<sub>2</sub>O<sub>2</sub> was used. The actual costs were higher than the predicted costs primarily due to over application of H<sub>2</sub>O<sub>2</sub> in the EO stage, brownstock washing variability, and unoptimized bleaching conditions. H<sub>2</sub>O<sub>2</sub> was over applied by 1.5 to 3.5 kg/ADMT during these runs. To operate at 85% D or dioxin free with H<sub>2</sub>O<sub>2</sub>, the actual cost

**TABLE 2 - KEY BLEACHING CONDITIONS for VARIOUS LEVELS  
of ClO<sub>2</sub> SUBSTITUTION**

BLEACHING SEQUENCE	NO. DAYS	PROD'N RATE ADMT/D unbl.	KAPPA NO.	SODA LOSS kgs Na <sub>2</sub> SO <sub>4</sub> per ADMT	DC STAGE			E STAGE			D STAGE	
					TEMP. deg. C	FINAL pH	RET'N (MIN.)	TEMP. deg. C	VAT pH	Cl <sub>2</sub> K NO.	TEMP. deg. C	FINAL pH
<u>WITHOUT H<sub>2</sub>O<sub>2</sub></u> (C85+D15)(EO)D	35.0	440	28.5	30.4	53.9	-	31.0	74.4	10.5	2.5	73.9	3.4
(D30C70)(EO)D	2.0	402	29.4	-	54.4	-	34.3	73.9	10.5	3.0	76.7	4.4
(D40C60)(EO)D	2.0	468	30.7	-	53.8	-	29.0	71.2	9.8	2.4	73.9	4.3
(D50C50)(EO)D	38.0	322	30.3	18.6	54.3	-	50.7	70.7	8.1	-	74.4	2.5
(D75C25)(EO)D	10.0	369	31.2	10.4	53.3	-	46.6	71.1	8.6	2.7	76.7	2.4
D100(EO)D	6.0	259	22.8	23.9	56.7	2.5	68.0	74.1	8.5	2.2	77.8	2.4
<u>WITH H<sub>2</sub>O<sub>2</sub></u> (D75C25)(EPO)D	2.0	482	26.0	-	54.4	-	40.4	76.7	10.1	-	75.0	3.2
(D85C15)(EPO)D	25.0	384	24.6	16.5	54.4	-	50.9	73.0	9.8	3.0	75.0	2.3
D100(EPO)D	22.0	301	26.0	13.8	56.5	2.6	60.5	76.0	10.5	3.0	75.6	2.5

**TABLE 3 - CHEMICAL CHARGES AND RELATIVE BLEACHING COSTS FOR  
VARIOUS LEVELS OF ClO<sub>2</sub> SUBSTITUTION**

BLEACHING SEQUENCE	DC STAGE kg/ADMT,bl		MOLEC. CL <sub>2</sub> MULT.	CHARGE FACTOR [1]	E STAGE kg/ADMT,bl			D STAGE kg/ADMT,bl		TOTAL CHARGE FACTOR [1]	ACTUAL RELATIVE BLEACH COST [2]	PREDICTED RELATIVE BLEACH COST [3]
	Cl <sub>2</sub>	ClO <sub>2</sub>			NaOH	O <sub>2</sub>	H <sub>2</sub> O <sub>2</sub>	ClO <sub>2</sub>	NaOH			
<u>WITHOUT H<sub>2</sub>O<sub>2</sub></u> (C85+D15)(EO)D	65.0	4.6	0.253	2.49	42.9	10.8	0.0	11.1	4.5	3.43	1.00	1.00
(D30C70)(EO)D	47.6	7.9	0.181	2.16	43.3	10.9	0.0	11.5	5.0	3.10	1.00	-
(D40C60)(EO)D	45.7	11.8	0.165	2.29	36.3	2.0	0.0	14.2	4.6	3.42	1.11	-
(D50C50)(EO)D	43.7	16.6	0.160	2.65	23.1	10.7	0.0	9.2	4.0	3.38	1.11	1.06
(D75C25)(EO)D	24.0	27.0	0.086	2.80	19.5	10.9	0.0	9.5	3.7	3.54	1.25	1.21
D100(EO)D	0.0	33.1	0.000	3.51	12.2	10.9	0.0	12.3	5.3	4.82	1.78	1.38
<u>WITH H<sub>2</sub>O<sub>2</sub></u> (D75C25)(EPO)D	15.6	18.2	0.067	2.25	27.0	5.4	8.2	7.2	0.4	2.92	1.31	1.26
(D85C15)(EPO)D	11.6	26.0	0.052	2.67	25.1	7.1	8.2	9.6	1.8	3.61	1.65	1.30
D100(EPO)D	0.0	26.8	0.000	2.50	23.6	9.5	10.8	10.4	2.3	3.47	1.56	1.42

[1] - Charge factor units => kg. of active Cl<sub>2</sub>/ADMT, unbl. per brownstock kappa no.

[2] - Corrected for kappa no. variations, caustic and H<sub>2</sub>O<sub>2</sub> application on the EO stage.

[3] - Corrected for kappa no. variations, caustic & H<sub>2</sub>O<sub>2</sub> addition to the EO stage, and ClO<sub>2</sub> in the final stage.

was 65% more than the reference, while the predicted cost was 30% more. To operate at 100% D or Cl<sub>2</sub> free, the actual cost was 56% more than 15% D, with the predicted cost being 42% higher. Also included in this figure is the actual cost for a five stage bleach plant, D100-EPO-D<sub>1</sub>-EP-D<sub>2</sub>, operating at 100% D and at pulping and bleaching conditions similar to Simpson's. For five stages the operating costs for 100% D are only 18% greater than the reference, since the bleaching is distributed over five stages rather than three. The cost of operating dioxin free is substantial, and even higher for a Cl<sub>2</sub> free operation, especially for a three stage bleach plant. Even at an increased cost, Simpson is committed to producing

fully bleached market pulp from an "environmentally friendly" process.

#### Pulp Quality

Table 4 lists the pulp quality figures for each operational period studied. The average market pulp brightness was in the range of 86 - 88% GE. The lowest brightness came on the 100% D run with no H<sub>2</sub>O<sub>2</sub>. For the same run with H<sub>2</sub>O<sub>2</sub> and a higher kappa no., the brightness was 0.9 of a point higher. This shows that H<sub>2</sub>O<sub>2</sub> is required to overcome the less efficient delignification at 100% D, which results

n achieving the brightness target for Cl<sub>2</sub> free market pulp. Brightness reversion and shive count (or dirt) appear to be slightly better for 75% D and above.

The measured strength properties (i.e., burst, tear, and breaking length) are essentially equal and within target specifications, except for 100% D, without H<sub>2</sub>O<sub>2</sub>, and 85% D, with H<sub>2</sub>O<sub>2</sub>. For 100% D, the tear was a bit lower than the others. This is probably a result of the pulp being overcooked (i.e., low incoming kappa no.). For the 85% D case, both tear and burst were lower, which may be explained by the higher final brightness of these runs. In general, Simpson observes high % D gives equivalent pulp strength properties as conventional bleaching for fully bleached market pulp.

**TABLE 4 - PULP QUALITY for VARIOUS LEVELS of ClO<sub>2</sub> SUBSTITUTION**

BLEACHING SEQUENCE	FINAL BR. % GE	BR. REV.	DIRT CT. ct./gm.	FINAL VISC. cps	BURST FACT.	TEAR FACT.	BR. LGT. km
<b>WITHOUT H<sub>2</sub>O<sub>2</sub></b>							
(C85+D15)(EO)D	87.2	3.5	1.0	18.7	81.1	123.3	10.1
(D30C70)(EO)D	87.9	-	-	18.7	-	-	-
(D40C60)(EO)D	86.9	-	-	18.9	-	-	-
(D50C50)(EO)D	87.5	3.4	1.0	19.0	79.7	132.9	10.5
(D75C25)(EO)D	87.6	2.6	0.4	20.8	80.3	136.0	9.6
D100(EO)D	86.1	2.9	0.0	19.5	81.6	111.4	10.4
<b>WITH H<sub>2</sub>O<sub>2</sub></b>							
(D75C25)(EPO)D	86.6	-	-	-	-	-	-
(D85C15)(EPO)D	88.8	2.5	0.8	14.9	75.4	115.7	10.0
D100(EPO)D	87.0	2.9	0.5	16.5	80.0	125.8	9.6

#### General Operational Observations

There are a few basic observations in operating the bleach plant at high substitution levels which did not show up in the results. First, the optical/residual sensor for the DC stage had to be reset at the 85% D level and above. Next, full replacement with ClO<sub>2</sub> was much more sensitive to changes in brownstock kappa no. and black liquor carryover. The addition of H<sub>2</sub>O<sub>2</sub> to the EO stage improved the overall stability of the bleach plant, especially when operating at 100% D.

#### CONCLUSIONS

The following main conclusions can be drawn from the high ClO<sub>2</sub> substitution experience at Simpson:

1. High % D (50% +) in the first bleach stage significantly reduced AOX and TCDD/F in the effluent and TCDD/F in the pulp.

2. At an AOX of 1.5 kg/tp in the effluent, after secondary treatment, the mill essentially operates dioxin (TCDD/F) free. This result is achieved by running at 85% D, which is equivalent to operating at a molecular chlorine multiple of less than 0.05.
3. H<sub>2</sub>O<sub>2</sub> added to the EO stage reduces the charge factor in the DC stage, which lowers the amount of elemental chlorine applied to this stage. This should have resulted in less AOX in the effluent, but it did not. Optimization of the brownstock washer and other mill modifications are expected to resolve this apparent inconsistency.
4. When operating at 100% D, 1 lb. of H<sub>2</sub>O<sub>2</sub> in the EO stage displaced 1.2 lbs of ClO<sub>2</sub> for the entire bleach plant. When H<sub>2</sub>O<sub>2</sub> was added to 100% D runs, the market pulp brightness was achieved and the bleach plant was more stable during upset conditions.
5. The SVP-LITE™ ClO<sub>2</sub> process used at Simpson Tacoma produces a ClO<sub>2</sub> solution with minimal Cl<sub>2</sub>, resulting in about 50% less AOX in the effluent after secondary treatment than the conventional process for 100% ClO<sub>2</sub> substitution.
6. Finished pulp properties of brightness, strength and cleanliness were essentially unchanged when replacing high amounts of Cl<sub>2</sub> in the DC stage with ClO<sub>2</sub>.
7. The cost for operating from 15 - 50% D was the same, and increased above 50% D. To operate dioxin free (85% D) with H<sub>2</sub>O<sub>2</sub>, the actual cost was 65% more than the reference, while the operating cost after optimization should be 30% higher. To operate Cl<sub>2</sub> free (100% D) with H<sub>2</sub>O<sub>2</sub>, the actual cost was 56% more than the 15% D runs, while the predicted cost is about 42% higher. For a five stage bleach plant, the bleaching cost is less than a three stage bleach plant since the bleaching is distributed over five stages rather than three.

#### NEXT STEPS

Simpson's progress in AOX and dioxin (TCDD/F) reduction has resulted in a wastewater discharge environmental permit (NPDES) based on maintaining a target substitution level of 85% D and monitoring AOX and dioxin levels for the next two years. The bleach plant has operated TCDD/F free since the high substitution trials in June of 1990 at 85% D with H<sub>2</sub>O<sub>2</sub> in the EO stage. Cl<sub>2</sub> free market pulp runs have been made, achieving pulp brightness in excess of 88% GE while using H<sub>2</sub>O<sub>2</sub>. Simpson's next step is to make extended runs as a Cl<sub>2</sub> free mill. It will be made possible once the new brownstock washing system is fully operational. Then the Tacoma mill will be poised to meet both future environmental legislation and future market demands.



## REFERENCES

1. Klein, R.E., "Simpson Tacoma Kraft Co. Mill Starts Up New Bleach Plant", Pulp & Paper, October 1990, p. 88.
2. Annergren, G.E., Lindblad, P., Carlsson, G., and Norrby, M., "Spent Liquors from Bleaching of Softwood Kraft Pulps. Effect of Chlorination Variables on the Content of Lipophilic Chlorinated Organic Matter with Low Molecular Mass", 1986 Proceedings of the EuCePa Symposium "Environmental Protection in the 90's", p. 65 (Helsinki, May 19-22, 1986).
3. Axegard, P., "Improvement of Bleach Plant Effluent by Cutting Back on Chlorine", Pulp & Paper Canada, 90:5 (1989) p. T183.
4. Axegard, P., "Substituting Chlorine Dioxide for Elemental Chlorine Makes the Bleach Plant Effluent Less Toxic", Tappi Journal, Vol. 69, No. 10, October 1986, p. 54.
5. Axegard, P. and Renberg, L., "The Influence of Bleaching Chemicals and Lignin Content on the Formation of Polychlorinated Dioxins and Dibenzofurans", Chemosphere, Vol. 19, Nos. 1-6, 1989, p. 661.
6. Axegard, P., "Chlorine Dioxide Substitution Reduces the Load of TOCl", TAPPI 1987 Pulping Conference Proceedings, p.105 (Washington, Nov. 1-5, 1987).
7. McDonough, T., "Overview of Emerging Technology", Workshop on Emerging Pulping and Chlorine-Free Bleaching Technologies, N.C. State University, March 18-20, 1991.
8. Standard Methods for the Examination of Water and Wastewater, 16<sup>th</sup> Edition, Method 506 "Organic Halogen (Total) Adsorption - Pyrolysis - Titrimetric Method (Tentative)", Microcolumn (4a) Method.
9. Germgard, U., Svensk Papperstid. (15): R138, 1985.
10. Munro, F., "Environmentally Influenced Evolution of E.B. Eddy Espanola's Bleaching Sequences", TAPPI 1990 Bleach Plant Operations Short Course, p. 13 (Hilton Head, S.C., June 17-22, 1990).
11. Basta, J., Holtinger, L., Hook, J., and Lundgren, P., "Low AOX, Possibilities & Consequences", TAPPI 1989 Pulping Conference Proceedings, p. 427 (Seattle, Oct. 22-25, 1989).
12. Basta, J., Andersson, L., Blom, C., Holtinger, L., Hook, J., "Reducing of AOX Levels. Part 2: Chlorine - Free Bleaching", 6<sup>th</sup> International Symposium on Wood & Pulping Chemistry (Victoria, Australia, April 30-May 4, 1991).
13. Axegard, P., "Effect of ClO<sub>2</sub> Substitution on Bleaching Efficiency and the Formation of Organically Bound Chlorine - Part II", Journal of Pulp and Paper Science, Vol. 12, No. 3, May 1986.
14. Pryke, D., Wilson, R., Swaney, J., O'Connor, B., Luthe, C., "Mill Experience with Chlorine Dioxide Delignification", 1991 International Pulp Bleaching Conference, Vol. 3, p. 219 (Stockholm, June 11-14, 1991).

## ACKNOWLEDGEMENT

Special thanks to Mr. Per Lundgren and Mr. Nils-Goran Johansson of Eka Nobel AB for their support during the % D trials and their guidance in writing this paper. The authors also wish to thank EKA NOBEL's lab in Bohus, Sweden for its work.

STATE OF OREGON

)  
) ss.  
)

County of Multnomah

I, Nancy H. Lewis, being duly sworn, depose and say: (1) I am a competent person over the age of 18 years; I am neither a party nor an attorney in the proceeding entitled In the Matters of NPDES Waste Discharge Permit No. 100716, issued to James River II, Inc. on November 14, 1990, and NPDES Waste Discharge Permit No. 100715, issued to the City of St. Helens on November 14, 1990, before the Environmental Quality Commission of the State of Oregon; (2) I am a person regularly employed by Lane Powell Spears Lubersky (with offices at 520 S.W. Yamhill Street, Suite 800, Portland, Oregon 97204-1383), attorneys for James River II, Inc. in said proceeding; (3) On June 11, 1992, I served all parties in said proceeding by delivering or mailing a true copy of the foregoing **Petition by James River II, Inc. for Reconsideration or Rehearing** to the following:

Fred Hansen, Director  
Dept. of Environmental Quality  
811 S.W. Sixth Avenue  
Portland, Oregon 97204

Carol A. Whipple, Member  
Environmental Quality Com'n.  
21755 Highway 138 West  
Elkton, Oregon 97436

Jay T. Waldron, Esq.  
Schwabe, Williamson & Wyatt  
1211 S.W. Fifth Avenue  
Portland, Oregon 97204

The Honorable Arno H. Denecke  
3890 Dakota Road, S.E.  
Salem, Oregon 97032

Linda McMahan, Member  
Environmental Quality Com'n.  
Berry Botanic Garden  
11505 S.W. Summerville Avenue  
Portland, Oregon 97219

Peter M. Linden, Esq.  
City Attorney  
P.O. Box 278  
St. Helens, Oregon 97051

Lydia R. Taylor  
Dept. of Environmental Quality  
811 S.W. Sixth Avenue  
Portland, Oregon 97204

John E. Bonine, Esq.  
Western Natural Resources Clinic  
School of Law

Linda K. Williams, Esq.  
1744 N.E. Clackamas St.  
Portland, Oregon 97232

William W. Wessinger, Chair  
Environmental Quality Commission  
121 S.W. Salmon, Suite 1100  
Portland, Oregon 97204

University of Oregon  
Eugene, Oregon 97403

Larry Edelman, Esq.  
Dept. of Justice  
1515 S.W. 5th Ave., No. 410  
Portland, Oregon 97201

Emery N. Castle, Vice Chair  
Environmental Quality Commission  
Oregon State University  
307 Ballard Hall  
Corvallis, Oregon 97331

Ralph A. Bradley, Esq.  
Bradley & Gordon, P.C.  
296 E. Fifth, Suite 309  
Eugene, Oregon 97401

Lawrence Knudson, Esq.  
Department of Justice  
1515 S.W. 5th Ave., No. 410  
Portland, Oregon 97201

Henry Lorenzen, Member  
Environmental Quality Commission  
Corey, Byler, Rew, et. al.  
P.O. Box 218  
Pendleton, Oregon 97801

Michael R. Campbell, Esq.  
Stoel Rives Boley Jones & Grey  
900 S.W. Fifth Avenue, #2300  
Portland, Oregon 97204

Richard Baxendale, Esq.  
506 National Building  
1008 Western Avenue  
Seattle, Washington 98104

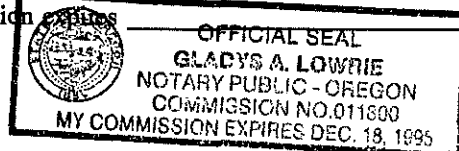
Brian J. King, Esq.  
Holland & Hart  
West One Plaza, Suite 1400  
Boise, Idaho 83702

*Nancy H. Lewis*  
\_\_\_\_\_

SUBSCRIBED AND SWORN TO before me this 11th day of June, 1992.

*Glady A. Lowrie*  
\_\_\_\_\_

Notary Public for Oregon  
My commission expires \_\_\_\_\_



Lane Powell Spears Lubersky  
520 S.W. Yamhill Street, Suite 800  
Portland, Oregon 97204-1383 (503) 226-6151

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

OF THE STATE OF OREGON

1  
2  
3 In the Matter of National )  
Pollutant Discharge Elimination )  
4 System Waste Discharge Permit )  
No. 100715, issued to the City )  
5 of St. Helens on November 14, )  
1990, )  
6 and )  
7 In the Matter of National )  
Pollutant Discharge Elimination )  
8 System Waste Discharge Permit )  
9 No. 100716, issued to James )  
River II, Inc. on November 14, )  
10 1990.

POPE & TALBOT'S PETITION  
FOR PARTICIPATION IN THE  
RECONSIDERATION OF EQC'S  
FINAL ORDER

11  
12 COMES NOW Pope & Talbot, Inc. (Pope & Talbot) to petition  
13 the Commission for permission to intervene or otherwise participate  
14 in any hearing or proceeding related to the Petitions for  
15 Reconsideration or Rehearing filed by James River II, Inc. and  
16 Boise Cascade Corporation in response to the Commission's Findings  
17 of Fact and Conclusions of Law and Final Order which were issued on  
18 April 16, 1992.

19 In this Order, the Commission decided to include limits  
20 on organochlorines, measured as AOX, in the NPDES permits issued to  
21 James River and to the City of St. Helens. The City's permit  
22 covers effluent from Boise Cascade's St. Helens Mill.

23 Citing new technological information and recent  
24 legislative and policy developments, however, both James River II,  
25 Inc. and Boise Cascade have filed petitions with the Commission for  
26 reconsideration or rehearing of the Commission's Findings of Fact  
Page and Conclusions of Law and Final Order.

1 - POPE & TALBOT'S PETITION FOR PARTICIPATION IN THE  
RECONSIDERATION OF EQC'S FINAL ORDER

(6812056226) WYATT, DENHAM & WYATT  
Attorneys at Law  
Suites 1600-1950, Pacwest Center  
1211 S. W. Fifth Avenue  
Portland, Oregon 97204-3795  
Telephone (503) 222-9981

1 Pope & Talbot now requests permission to participate in  
2 the consideration of the James River and Boise Cascade Petitions,  
3 as well as in any ensuing discussions concerning the scope of the  
4 reconsideration or rehearing, specific issues to be remanded, and  
5 subsequent scheduling. Pope & Talbot was previously permitted to  
6 intervene in the original proceedings before the Commission, and  
7 the same reasons that allowed Pope & Talbot to participate in the  
8 original EQC proceedings require the Commission to allow it to  
9 participate in the reconsideration. For a more complete statement  
10 of its interest in this proceeding, Pope & Talbot incorporates the  
11 attached Request for Participation which was previously filed.

12 Pope & Talbot does not anticipate at this time raising  
13 issues on its own but is concerned with the complete and fair  
14 presentation of the issues to the Hearings Officer and the EQC.  
15 Pope & Talbot wishes to preserve its right to present oral argument  
16 and to provide written materials on the petitions themselves and on  
17 the scope of any ensuing reconsideration or rehearing. Further,  
18 Pope & Talbot can be expected to comment on issues which would  
19 implicate its current NPDES permit or the proposed application for  
20 an expansion permit.

21 Respectfully submitted,

22 SCHWABE, WILLIAMSON & WYATT

23  
24 By: 

Jay T. Waldron

David F. Bartz, Jr.

Of Attorneys for Pope & Talbot

25  
26  
Page

1                   BEFORE THE ENVIRONMENTAL QUALITY COMMISSION  
2                                   OF THE STATE OF OREGON

3 In the matter of the NPDES Waste     )  
4 Discharge Permit No. 3754-J, James   )     REQUEST FOR  
5 River II, Inc., Wauna Mill, and     )     PARTICIPATION  
6 the NPDES Waste Discharge Permit   )  
7 No. 100715, Boise Cascade.         )

8                   Pursuant to the order of the EQC dated December 26,  
9 1990, the order of the Hearings Officer at the pre-hearing  
10 conference in this matter on December 14, 1990 and OAR 137-03-005,  
11 Pope & Talbot, Inc. (Pope & Talbot), requests the right to  
12 participate in the proceedings on both permits identified above as  
13 a party or in the alternative that it be allowed to intervene as a  
14 party. In support of this request Pope & Talbot submits the  
15 following:

16                                   1.

17                   Pope & Talbot is a Delaware corporation authorized to do  
18 business in the State of Oregon, with its principal office at P.O.  
19 Box 400, Halsey, Oregon 97348.

20                                   2.

21                   Pope & Talbot's attorneys are Jay T. Waldron and  
22 David F. Bartz, Jr., Schwabe, Williamson & Wyatt, Suites 1600-  
23 1950, 1211 S.W. Fifth Avenue, Portland, Oregon 97204, 222-9981.

24                                   3.

25                   Pope & Talbot requests participation as a party.

26                                   4.

27                   Pope & Talbot is interested in these proceedings and  
28 seeks to participate as a party because it owns and operates a

1 bleached kraft pulp mill at Halsey, Linn County, Oregon ("the  
2 Halsey Mill"). The following is further detail of Pope & Talbot's  
3 interest in these proceedings:

4           A. The Halsey Mill discharges a treated process  
5 effluent into the Willamette River at River Mile 147.4. The point  
6 of discharge is in the Mid-Willamette Basin to which OAR 340-41-  
7 442 et seq. applies.

8           B. The Halsey Mill discharges effluent into the  
9 Willamette River pursuant to a National Pollution Discharge  
10 Elimination System permit number 100413 ("NPDES Permit") issued by  
11 the Oregon Department of Environmental Quality ("DEQ"). The NPDES  
12 permit expiration date is December 31, 1992.

13           C. Pope & Talbot has completed and will soon submit to  
14 the Department of Environmental Quality an application for an  
15 NPDES permit for a substantial expansion of its Halsey Mill.

16           D. On November 7, 1990 the DEQ issued a revised NPDES  
17 permit for the Halsey Mill. In conjunction with the issuance of  
18 that permit, the DEQ and Pope & Talbot entered into an Order on  
19 Consent whereby Pope & Talbot relinquished any right to appeal  
20 from any provision of that revised permit. Consequently, Pope &  
21 Talbot has not appealed its permit and there will be no contested  
22 case before the Environmental Quality Control Commission  
23 addressing that permit.

24           E. Like the Boise Cascade and James River Mills which  
25 are the subject of these proceedings, Pope & Talbot's Halsey Mill  
26 discharges both TCDD (Dioxin) and absorbable organic halogens

1 (AOX). This proceeding will involve issues concerning the  
2 discharge limits for dioxin and AOX as well as monitoring and  
3 other related requirements.

4 F. Pope & Talbot will expend over \$50,000,000 to meet  
5 the requirements of the November 7, 1990 permit and the Order on  
6 Consent. All those improvements are premised on the long term  
7 requirements established in the permit and Order on Consent.

8 G. The issues which Pope & Talbot expects to be raised  
9 by the mills and by the public participants will question the  
10 standards, requirements and policies for dioxin and AOX. These  
11 issues may have an impact on the Pope & Talbot permit. These  
12 issues may also have substantial impact on Pope & Talbot's  
13 application for a permit for its expanded facility.

14 H. Although similar in many respects to the Boise  
15 Cascade and James River Mills, Pope & Talbot is the only bleached  
16 kraft paper mill on the Willamette River, a navigable waterway  
17 located wholly within the State of Oregon. Pope & Talbot produces  
18 paper products and sells those paper products in markets in direct  
19 competition with the products produced at the Boise Cascade and  
20 James River mills.

21 I. Pope & Talbot could be adversely effected by the  
22 outcome of a review of the standards and requirements for the  
23 other two mills.

24 5.

25 Pope & Talbot's status as an economic competitor of the  
26 two mills, its status as the only bleached kraft paper mill on the

1 Willamette River, and the potential impact on its expansion permit  
2 are three reasons why the existing parties cannot adequately  
3 represent the interests of Pope & Talbot as identified above.

4 6.

5 Pope & Talbot submits this request for participation in  
6 good faith and not for purposes of delay. The participation of  
7 Pope & Talbot will not burden the proceeding nor unreasonably  
8 affect the adjudication of these contested cases.

9 Respectfully submitted,

10 SCHWABE, WILLIAMSON & WYATT

11

12

By 

JAY T. WALDRON

13

DAVID F. BARTZ, JR.

14

Of Attorneys for Pope & Talbot

15

16

17

18

19

20

21

22

23

24

25

26



CERTIFICATE OF SERVICE

1 I hereby certify that on the 1st day of July, 1992, I  
2 served the foregoing POPE & TALBOT'S PETITION FOR PARTICIPATION  
3 IN THE RECONSIDERATION OF EQC'S FINAL ORDER, on the following  
4 parties at the following addresses:  
5

6 The Honorable Arno H. Denecke  
7 3890 Dakota Road SE  
8 Salem, Oregon 97302

9 John E. Bonine  
10 Western Environmental Law Clinic  
11 School of Law  
12 University of Oregon  
13 Eugene, Oregon 97403

14 Larry Edelman  
15 Assistant Attorney General  
16 Oregon Department of Justice  
17 1515 S. W. Fifth Ave., Suite 410  
18 Portland, Oregon 97201

19 John W. Gould  
20 Richard H. Williams  
21 Lane Powell Spears Lubersky  
22 520 S. W. Yamhill St., Suite 800  
23 Portland, Oregon 97204

24 Linda K. Williams  
25 1744 N. E. Clackamas Street  
26 Portland, Oregon 97232

27 William W. Wessinger, Chair  
28 Environmental Quality Commission  
29 121 S. W. Salmon, Suite 1100  
30 Portland, Oregon 97204

31 Larry Knudsen  
32 Assistant Attorney General  
33 Oregon Department of Justice  
34 1515 S. W. Fifth Ave., Suite 410  
35 Portland, Oregon 97201

36 Peter M. Linden  
37 City Attorney  
38 City of St. Helens  
39 P. O. Box 278  
40 St. Helens, Oregon 97051

Page

Page 1 - CERTIFICATE OF SERVICE

(6812056226) (27269-1)  
THOMAS M. LINDEN & WYATT  
Attorneys at Law  
Suites 1600-1950, Pacwest Center  
1211 S. W. Fifth Avenue  
Portland, Oregon 97204-3795  
Telephone (503) 222-9981

1 Mr. Ralph A. Bradley  
Bradley & Gordon, P.C.  
296 E. Fifth St., Suite 309  
2 Eugene, Oregon 97401

3 Lydia Taylor  
Department of Environmental Quality  
4 811 S. W. Sixth Avenue  
Portland, Oregon 97204

5 Michael R. Campbell  
6 Stoel Rives Boley Jones & Grey  
900 S. W. Fifth Avenue  
7 Portland, Oregon 97204

8 Mr. Fred Hansen, Director  
Department of Environmental Quality  
9 811 S. W. Sixth Avenue, 6th Floor  
Portland, Oregon 97204

10 Emery N. Castle, Vice Chair  
11 Environmental Quality Commission  
Oregon State University  
12 307 Ballard Hall  
Corvallis, Oregon 97331

13 Linda McMahan  
14 Berry Botanic Garden  
11505 S. W. Summerville Ave.  
15 Portland, Oregon 97219

16 Henry Lorenzen, Member  
Environmental Quality Commission  
17 Corey, Byler, Rew, et al.  
P. O. Box 218  
18 Pendleton, Oregon 97801

19 Carol W. Whipple, Member  
Environmental Quality Commission  
20 21755 Highway 138 West  
Elkton, Oregon 97436

21  
22 by mailing to them a true and correct copy thereof, certified by  
23 me as such, placed in a sealed envelope addressed to them at the

24 - - -

25 - - -

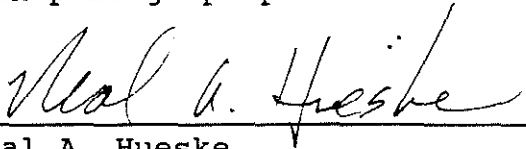
26 - - -

Page

Page 2 - CERTIFICATE OF SERVICE

(68120/56226/NAH/97268-1)  
GONWADE, WILLYMASON & WYATT  
Attorneys at Law  
Suites 1600-1950, Pacwest Center  
1211 S. W. Fifth Avenue  
Portland, Oregon 97204-3795  
Telephone (503) 222-9981

addresses set forth above, and deposited in the U.S. Post Office  
at Portland, Oregon on said day with postage prepaid.

  
Neal A. Hueske

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26

Page

Page 3 - CERTIFICATE OF SERVICE

(6812056226/ML/97260-1)  
SCOTT B. JAMESON & WYATT  
Attorneys at Law  
Suites 1600-1950, Pacwest Center  
1211 S. W. Fifth Avenue  
Portland, Oregon 97204-3795  
Telephone (503) 222-9961

## Environmental Quality Commission

- Rule Adoption Item
- Action Item
- Information Item

Agenda Item C  
July 23-24, 1992 Meeting

**Title:**

Proposed Adoption of Rule Amendments to Delay Implementation of the Enterococci Bacteria Standard and Reinstate and Substitute the Fecal Coliform Standard in the Interim

**Summary:**

Problems with implementation of a new enterococcus bacteria standard, appeals to permits based on the standard, and emerging new science have prompted the department to want to take another look at this standard.

This agenda item proposes a rule change to delay implementation of the enterococcus standard for three years while further study is made. The previous standard based on fecal coliform would be reinstated in the interim.

A public hearing has been held and no opposition was registered.

**Department Recommendation:**

Adopt the rule amendments to the water quality standards for bacteria as presented in Attachment A of the staff report.

*Thomas J. Lucas*  
Report Author

*Hydra Daylor*  
Division Administrator

*Stephanie Hallock*  
Director *Acting*

REQUEST FOR EQC ACTION

Meeting Date: July 23, 1992  
Agenda Item: C  
Division: Water Quality  
Section: Municipal Waste

**SUBJECT:**

Surface Water Quality Standards for Bacteria.

**PURPOSE:**

This agenda item proposes to delay implementation of the enterococcus bacteria standard for a period of three years, to reinstate the fecal coliform bacteria standard during the interim, and to reinstate the enterococcus bacteria standard after three years.

**ACTION REQUESTED:**

- Work Session Discussion
  - General Program Background
  - Potential Strategy, Policy, or Rules
  - Agenda Item \_\_\_ for Current Meeting
  - Other: (specify)
  
- Authorize Rulemaking Hearing
  - Adopt Rules
    - Proposed Rules Attachment A
    - Rulemaking Statements Attachment B
    - Fiscal and Economic Impact Statement Attachment C
    - Public Notice Attachment D
  
- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
  - Proposed Order Attachment



811 SW Sixth Avenue  
Portland, OR 97204-1390  
(503) 229-5696



\_\_\_ Approve Department Recommendation

\_\_\_ Variance Request

\_\_\_ Exception to Rule

\_\_\_ Informational Report

\_\_\_ Other: (specify)

Attachment \_\_\_

Attachment \_\_\_

Attachment \_\_\_

Attachment \_\_\_

**DESCRIPTION OF REQUESTED ACTION:**

Prior to 1981 the water quality standard for bacteria was total coliform. In 1981 the Environmental Quality Commission adopted a fecal coliform standard. Based on information available at that time, the Commission concluded that fecal coliform was a better indicator organism for the possible presence of human pathogens contained in effluent discharges from domestic waste sources.

In July 1991, the Commission accepted the Department staff recommendations and replaced the fecal coliform bacteria standard with a standard based on enterococcus bacteria. The Department recommended the replacement of fecal coliform bacteria with enterococcus bacteria based on EPA guidelines and studies demonstrating that enterococcus is a much better indicator of the presence of human pathogens.

When the new enterococcus bacteria standard was adopted in July 1991, Commission members and Department staff were aware that several communities were concerned about the new standard, and that additional information would be collected and analyzed to further assess the new standard. Based on the information reviewed to date, Department staff believe more time is needed before any conclusions can be reached.

To facilitate continued investigation and to remove permittee uncertainty in meeting the new standard, the Department is proposing to reinstate the fecal coliform bacteria water quality standard for a period of three years. The standard will apply to all surface waters in the state. The Department is not proposing to eliminate the current enterococcus bacteria standard but rather to delay implementation of the standard for the same three year time period. During the three year period the Department and many domestic waste source permittees will continue to investigate and evaluate the enterococcus bacteria standard. At the end of the three year period the Department may choose to implement the enterococcus standard, propose to the Commission that the standard be modified, or propose that a new standard be adopted.

Meeting Date: July 23, 1992  
Agenda Item: C  
Page 3

The Department mailed hearing notices and the proposed rule amendments on June 1, 1992, to all domestic sewage treatment facility permittees and to all parties interested in receiving proposed rule amendments. A hearing was held at Department Headquarters on July 1, 1992, and the hearing record closed at 5:00 p.m. on the same day. The testimony was summarized and a response to the testimony was prepared (Attachments G and H).

**AUTHORITY/NEED FOR ACTION:**

<u>    </u>	Required by Statute: _____	Attachment <u>    </u>
	Enactment Date: _____	
<u>  X  </u>	Statutory Authority: <u>  ORS 468B.048  </u>	Attachment <u>  E  </u>
<u>    </u>	Pursuant to Rule: _____	Attachment <u>    </u>
<u>  X  </u>	Pursuant to Federal Law/Rule Federal Clean Water Act	Attachment <u>    </u>

  X   Time Constraints: It is important for the proposed rule amendments to be in effect as soon as possible. Several major domestic source permits are now being held up pending a Commission decision. If the Commission adopts the proposed amendments, permittee uncertainty will be removed and permits can be rapidly issued.

**DEVELOPMENTAL BACKGROUND:**

<u>    </u>	Advisory Committee Report/Recommendation	Attachment <u>    </u>
<u>  X  </u>	Hearing Officer's Report/Recommendations	Attachment <u>  G  </u>
<u>  X  </u>	Response to Testimony/Comments	Attachment <u>  H  </u>
<u>    </u>	Prior EQC Agenda Items: (list)	Attachment <u>    </u>
<u>    </u>	Other Related Reports/Rules/Statutes:	Attachment <u>    </u>
<u>    </u>	Supplemental Background Information	Attachment <u>    </u>

**REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:**

The regulated community subject to the proposed rule amendments includes private industrial and domestic system dischargers, municipal waste water treatment facilities, federal and state agencies with treatment facilities, cities, counties and individual citizens.

As presented in the Hearing Officer's Report (Attachment G) seventeen communities and associations provided testimony on the proposed rule amendments. All commenters expressed concern about the enterococcus bacteria standard. These concerns are summarized as follows:

1. Technical Basis. There was testimony stating that studies conducted by EPA lack scientific credibility and that the data <sup>are</sup> ~~is~~ questionable. It was suggested that data collected by communities and by the Department to assess the ability of existing disinfection facilities to meet the enterococcus standard are in conflict. Based on an evaluation of data, the Department concluded that the enterococcus standard could be met with existing facilities. Several communities, based on an evaluation of their data, concluded that extensive modification of disinfection facilities would be necessary. Testimony was also submitted suggesting that the Department had not justified selection of the standard's numerical values or the application point of the standard at the end of the effluent discharge pipe.
2. Public Health. Testimony was submitted stating that the State of Oregon has used fecal coliform bacteria as an indicator organism for many years and swimming related illness in Oregon is not common. It was suggested that since the fecal coliform standard is effective in protecting public health, why change the standard? Testimony was also submitted suggesting that disinfection of enterococcus bacteria would require "superchlorination" and this could result in discharge of potentially toxic chlorinated hydrocarbons.
3. Costs. Many commenters stated that substantial modification of disinfection facilities would be necessary to meet the enterococcus standard, and that the cost would be very high. One testifier stated that the cost for required modifications to municipal waste treatment facilities statewide would be "approximately one billion dollars."

The testimony supported both reinstatement of the fecal coliform standard, and further research and evaluation over the next three years. Some commenters suggested that there should be no provisions for automatic reinstatement of the enterococcus standard. Several commenters suggested that after research and evaluation is completed, the most appropriate standard should be selected for application.



**PROGRAM CONSIDERATIONS:**

The impact on Department staff and workload will be neutral with respect to permit issuance. Several major domestic source permits have been drafted to include the enterococcus bacteria standard. These permits can be easily revised to incorporate the fecal coliform standard. A few minor domestic permits will have to be amended to replace the enterococcus standard with the fecal standard. The fecal coliform standard will be incorporated into future new permits and permit renewals. Some staff time will need to be allocated for the next three years to an ongoing review of data and continued research. This activity is now ongoing in the municipal waste section.

**ALTERNATIVES CONSIDERED BY THE DEPARTMENT:**

1. Do not adopt the proposed amendments and maintain the current rule.
2. Adopt amendments to the current rule language and replace enterococcus bacteria with fecal coliform bacteria permanently.
3. Adopt amendments to the current rule language and replace the enterococcus bacteria standard with the fecal coliform bacteria standard for a period of three years. The enterococcus standard will be effective in July 1995.

**DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:**

The Department recommends the proposed rule amendments be adopted as proposed in Alternative 3. The Department further recommends that the Commission direct the Department to continue data analysis and research, in conjunction with similar local government activities, to determine the most appropriate indicator organism for protection of human health and water quality, and to prepare a written report for Commission review by July 1995. The written report must contain a recommended indicator organism, recommended numerical values, and recommended point of application of the standard.

Meeting Date: July 23, 1992  
Agenda Item: C  
Page 6

Alternative 1, do not adopt the proposed amendments and maintain the current rule, was considered and rejected. There was substantial public comment regarding the lack of a strong technical basis for selection of the enterococcus bacteria standard. Concerns were also expressed regarding very expensive capital improvements to disinfection facilities.

Alternative 2, adopt amendments to the current rule language and replace enterococcus bacteria with fecal coliform bacteria permanently, was considered and rejected. Work performed to date on the applicability of enterococcus as the appropriate indicator organism should not be disregarded. After additional research and evaluation the Department may again conclude that enterococcus is the most appropriate indicator organism, or that another organism is most appropriate.

**CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:**

The proposed rule amendments are consistent with the agency's strategic plan direction, agency policies and legislative policy.

**INTENDED FOLLOWUP ACTIONS:**

The Department will continue to work with local governments, the League of Oregon cities and the Association of Clean Water Agencies for the next three years. Water quality analyses of bacteria will be conducted on an ongoing basis. Reviews of pertinent scientific studies will be made as they are completed, as well as reviews of other pertinent literature. Personnel from other state agency water programs will be contacted to determine their experience in regulating various water quality bacteria standards. Department staff will consider forming a task force in the third year to review all useful information and to provide recommendations to the Department. At the conclusion of the three year period, the Department will either implement the enterococcus standard or propose additional rule amendments. Proposals could range from permanent reinstatement of the fecal coliform standard to a new indicator organism.

Meeting Date: July 23, 1992  
Agenda Item: C  
Page 7

Approved:

Section: Barbara A. Burton  
Division: Lydia Taylor  
Director: Stephanie Hallock, Acting

Report Prepared By: Thomas J. Lucas

Phone: 229-5065

Date Prepared: July 6, 1992

TJL:crw  
MW\WC10\WC10406.5  
7-8-92

OREGON ADMINISTRATIVE RULES

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-205(2) (e)

NORTH COAST-LOWER COLUMBIA BASIN

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(ii) Marine waters and estuarine shellfish growing waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.

(iii) Estuarine waters other than shellfish growing waters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values

described in paragraphs (2)(e) ~~(A)~~ (B)(i) through ~~(e)~~ (iii) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan~~:-}~~:

- ~~(A)~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.
- ~~(B)~~ (ii) Marine waters and estuarine shellfish growing waters: A fecal coliform median concentration of 14 organisms per 100 ml, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.
- ~~(e)~~ (iii) Estuarine waters other than shellfish growing waters: A geometric mean of 35 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 104 enterococci per 100 ml.
- ~~(D)~~ ~~Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci:-}~~

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-245(2) (e)

**MID COAST BASIN**

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(ii) Marine waters and estuarine shellfish growing waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.

(iii) Estuarine waters other than shellfish growing waters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraphs (2) (e) ~~{(A)}~~ (B) (i) through ~~{(e)}~~ (iii) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan~~{-}~~:

- ~~{(A)}~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.
- ~~{(B)}~~ (ii) Marine waters and estuarine shellfish growing waters: A fecal coliform median concentration of 14 organisms per 100 ml, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.
- ~~{(e)}~~ (iii) Estuarine waters other than shellfish growing waters: A geometric mean of 35 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 104 enterococci per 100 ml.
- ~~{(D)}~~ ~~Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}~~

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-285(2) (e)

UMPQUA BASIN

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(ii) Marine waters and estuarine shellfish growing waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.

(iii) Estuarine waters other than shellfish growing waters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraphs (2) (e) ~~(A)~~ (B) (i) through ~~(e)~~ (iii) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:



~~{(A)}~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B)}~~ (ii) Marine and shellfish growing waters: A fecal coliform median concentration of 14 organisms per 100 ml, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.

~~{(e)}~~ (iii) Estuarine waters other than shellfish growing areas: ~~{Freshwaters:}~~ A geometric mean of 35 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 104 enterococci per 100 ml.

~~{(B)}~~ Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci:}

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The ~~{bracketed}~~ portions of text represent proposed deletions made to the rules

OAR 340-41-325(2) (e)

SOUTH COAST BASIN

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(ii) Marine waters and estuarine shellfish growing waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.

(iii) Estuarine waters other than shellfish growing waters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraphs (2) (e) ~~{(A)}~~ (B) (i) through ~~{(e)}~~ (iii) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

~~{(A)}~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B)}~~ (ii) Marine waters and estuarine shellfish growing waters: A fecal coliform median concentration of 14 organisms per 100 ml, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.

~~{(e)}~~ (iii) Estuarine waters other than shellfish growing waters: A geometric mean of 35 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 104 enterococci per 100 ml.

~~{(D)}~~ ~~Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}~~

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-365(2) (e)

ROGUE BASIN

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(ii) Marine waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.

(iii) Estuarine waters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraphs (2) (e) ~~{(A)}~~ (B) (i) through ~~{(e)}~~ (iii) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

- [(A)] (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.
- [(B)] (ii) Marine waters: A fecal coliform median concentration of 14 organisms per 100 ml, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.
- [(e)] (iii) Estuarine waters: ~~[Freshwaters:]~~ A geometric mean of 35 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 104 enterococci per 100 ml.
- [(B)] ~~Existing permit effluent limitations for fecal coliform will remain in effect until permit renewal, or until the Department reopens existing permits to include an effluent limit and compliance schedule for enterococci.~~

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-445(2) (e)

WILLAMETTE BASIN

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

~~{(A)}~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B) Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci.}~~

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-485(2) (e)

**SANDY BASIN**

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

~~{(A)}~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B)}~~ Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

**OAR 340-41-525(2) (e)**

**HOOD BASIN**

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~(A)~~ (B) (i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan.

~~(A)~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~(B) Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}~~



**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-565(2) (e)

**DESCHUTES BASIN**

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995: Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

~~{(A)}~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B) Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}~~

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The ~~{bracketed}~~ portions of text represent proposed deletions made to the rules

OAR 340-41-605

JOHN DAY BASIN

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan.

~~{(A)}~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B)}~~ Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

**OAR 340-41-645(2) (e)**

**UMATILLA BASIN**

**(e) Bacteria Standards.**

**(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):**

**(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.**

**(B) Effective July 1, 1995.** Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ **(B) (i)** of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan.

~~{(A)}~~ **(i)** Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B)}~~ **Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}**

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-685(2) (d)

WALLA WALLA BASIN

(d) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(d) ~~(A)~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

~~(A)~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~(B)~~ Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-;

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-725(2) (e)

**GRANDE RONDE BASIN**

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~(A)~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan.

~~(A)~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~(B) Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-;~~

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

**OAR 340-41-765(2) (e)**

**POWDER BASIN**

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

~~{(A)}~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B) Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci:}~~

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-805(2) (e)

**MALHEUR RIVER BASIN**

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

[(A)] (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B) Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}~~

**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~{bracketed}~~ portions of text represent proposed deletions made to the rules

**OAR 340-41-845(2) (e)**

**OWYHEE BASIN**

**(e) Bacteria Standards.**

**(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):**

**(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.**

**(B) Effective July 1, 1995.** Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ **(i)** of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

~~{(A)}~~ **(i)** Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B)}~~ **Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}**



**NOTE:**

The underlined portions of text represent proposed additions made to the rules.

The ~~{bracketed}~~ portions of text represent proposed deletions made to the rules

**OAR 340-41-885(2) (e)**

**MALHEUR LAKE BASIN**

**(e) Bacteria Standards.**

**(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):**

**(i) Freshwaters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.**

**(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ (B) (i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:**

**~~{(A)}~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.**

**(C) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, or bathing, or otherwise injurious to public health shall not be allowed.**

**~~{(B)} Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit~~**

~~renewal, or until the Department reopens existing  
permits to include an effluent limit and compliance  
schedule for enterococci.~~

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-925(2) (e)

GOOSE AND SUMMER LAKES BASIN

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~(A)~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

~~(A)~~ (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~(B)~~ Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci.-}

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The ~~bracketed~~ portions of text represent proposed deletions made to the rules

OAR 340-41-965(2) (e)

KLAMATH BASIN

(e) Bacteria Standards.

(A) Effective upon filing and through June 30, 1995. Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

(i) Main stem of Klamath River: Average concentrations shall not exceed 1000 per 100 milliliters, with 20% of the samples not to exceed 2400 per 100 milliliters.

(B) Effective July 1, 1995. Bacteria of the coliform group associated with fecal sources and bacteria of the enterococci group (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria values described in paragraph (2)(e) ~~{(A)}~~ (B)(i) of this rule. However, the Department may designate site-specific bacteria criteria on a case-by-case basis to protect beneficial uses. Site specific values shall be described in and included as part of a water quality management plan:

[(A)] (i) Freshwaters: A geometric mean of 33 enterococci per 100 milliliters based on no fewer than five samples, representative of seasonal conditions, collected over a period of at least 30 days. No single sample should exceed 61 enterococci per 100 ml.

~~{(B) Existing-permit-effluent-limitations-for-fecal coliform-will-remain-in-effect-until-permit renewal,-or-until-the-Department-reopens-existing permits-to-include-an-effluent-limit-and-compliance schedule-for-enterococci-}~~

## Attachment B

### STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the Environmental Quality Commission's intended action to adopt a rule.

#### (1) Legal Authority

Oregon Revised Statutes (ORS) 468B.048 authorizes the Environmental Quality Commission to adopt rules which specify standards of quality and purity for state waters. ORS 468.020 authorizes the Commission to adopt such rules and standards as is necessary to carry out its policies. ORS 468B.035 authorizes the Environmental Quality Commission to adopt rules to implement provisions of the Federal Water Pollution Control Act and federal regulations and guidelines issued pursuant to the Act.

#### (2) Need for the Rule

The Department proposes to amend the water quality rules to delay the implementation of the enterococci bacteria standard until July 1995 and in the interim to reinstate the prior fecal coliform bacteria standard.

The reason for the implementation delay request is that more investigation and data analysis are necessary to evaluate the applicability of the current enterococci bacteria standard to wastewater treatment regulation, and protection of identified beneficial uses including water contact recreation. Continued investigations are needed to determine:

1. Whether enterococcus bacteria is an appropriate indicator organism and whether a standard based on another indicator organism such as E. coli bacteria would be more appropriate.
2. Whether the enterococcus bacteria criteria values in the rules are appropriate and if the values should be revised.
3. Whether a single numerical criteria value is appropriate and if the value should be varied on a seasonal basis.
4. Whether the criteria values should be measured at the end of the effluent discharge pipe, the zone of initial dilution, or at the boundary of a specifically defined mixing zone.

## Statement of Need For Rulemaking

5. If the cost for modifying disinfection facilities to meet the new standard is affordable, and if the timetable for implementation is appropriate.

(3) **Principal Documents and Information Relied Upon in this Rulemaking**

Data supplied by municipalities pertaining to municipal wastewater treatment plant performance in meeting proposed enterococcus permit requirements.

Discussions with local government officials.

## Attachment C

### FISCAL AND ECONOMIC IMPACT

#### 1. Municipalities such as Cities, Service Districts and Sanitary Districts.

The proposed rule change delays application of the enterococci bacteria standard until July 1995, and reinstates the fecal coliform bacteria standard which has been in effect since June 1983. This rule change will have direct positive impact on the economics associated with the operation, maintenance, repair or replacement of the sewer collection system or wastewater treatment system of any municipal wastewater treatment facility permit holder. Some permittees will not have to increase chlorination/dechlorination (Cl/SO<sub>2</sub>) costs. Other facilities will not have to re-build or expand disinfection facilities. Some permit holders who may have been required to install and operate expensive filters in order to meet the enterococci standard, will not have to do so. The overall cost savings is not quantified, but testimony submitted prior to adoption of the enterococci bacteria standard suggests that the cost and fiscal impact is significant.

The proposed rule change will have an indirect positive impact on municipalities. This indirect impact is associated with a small reduction in liability. This rule change will hold harmless the permittee from Department enforcement and third party legal actions in cases where violation of enterococci bacteria standards occur. The cost saving is not known.

#### 2. Small Business.

The impact of the proposed rule amendment on small businesses which hold domestic wastewater treatment permits will be the same as those presented above for municipalities.

#### 3. Large Business.

The impact of the proposed rule change on large industries with wastewater treatment facilities which treat and discharge sanitary wastes will be the same as those presented above for municipalities.

**4. Other State Agencies.**

Only a few state agencies now have facilities with separate domestic treatment systems which require a permit. The impact on those permittees will be similar to the impacts described above for municipalities.



# A CHANCE TO COMMENT ON...

## REVISION OF ENTEROCOCCI BACTERIA STANDARDS

Notice Issued: June 1, 1992

Comments Due: July 1, 1992

### WHO IS AFFECTED:

All residents, local governments, industries and businesses in the State of Oregon.

### WHAT IS PROPOSED:

The Department proposes to amend water quality standards in Oregon Administrative Rules, Chapter 340, Division 41, to reinstate the fecal coliform bacteria standards until July 1995, pending completion of further investigations to determine applicability of the enterococci bacteria standard.

### WHAT ARE THE HIGHLIGHTS:

In July 1991, the Environmental Quality Commission accepted DEQ staff recommendations and replaced the fecal coliform bacteria standard with a standard based on enterococci bacteria. The information presented to the Commission suggested that selection of a new indicator organism was appropriate for the protection of human health from swimming related illness.

Several communities have expressed concerns about the enterococcus bacteria standard, as follows:

1. Whether enterococcus bacteria is an appropriate indicator organism and whether a standard based on another indicator organism such as E. coli bacteria would be more appropriate.
2. Whether the enterococcus bacteria criteria values in the rules are appropriate and if the values should be revised.



811 S.W. 6th Avenue  
Portland, OR 97204

11/1/86

### FOR FURTHER INFORMATION:

Contact the person or division identified in the public notice by calling 229-5696 in the Portland area. To avoid long distance charges from other parts of the state, call 1-800-452-4011.

3. Whether a single numerical criteria value is appropriate and if the value should be varied on a seasonal basis.
4. Whether the criteria values should be measured at the end of the effluent discharge pipe, the zone of initial dilution, or at the boundary of a specifically defined mixing zone.
5. Whether the cost for modifying disinfection facilities to meet the new standard is affordable, and whether the timetable for implementation is appropriate.

**HOW TO COMMENT:**

Copies of the complete proposed rule package may be obtained from the Water Quality Division in Portland (811 SW Sixth Avenue) or the regional office nearest you. For further information contact Tom Lucas at 229-5065.

A public hearing will be held before a hearings officer at the following time and location:

July 1, 1992  
11:00 am  
Department of Environmental Quality  
Conference Room 3A  
811 SW Sixth Avenue  
Portland, Oregon

Oral and written comments will be accepted at the public hearing. Written comments may be sent to the DEQ, Water Quality Division, 811 SW Sixth Avenue, Portland, Oregon 97204, but must be received by no later than 5:00 pm, July 1, 1992

**WHAT IS THE NEXT STEP:**

The Environmental Quality Commission may adopt rule amendments identical to the ones proposed, adopt modified rules as a result of testimony received, or may decline to adopt rules. The Commission will consider the proposed rule amendments at its July 1992 meeting. July 23 and 24 have been set aside for the Commission meeting. Final meeting arrangements have not been completed at this time.

## WATER QUALITY

468B.048

- (a) Be completed on or before March 1, 1993; and
- (b) Be presented to the public by the contractor at a hearing conducted on or before March 15, 1993. [1991 c.922 §1]

**(Surface Water)**

**468B.040 Certification of hydroelectric power project; comments of affected state agencies.** The Director of the Department of Environmental Quality shall approve or deny certification of any federally licensed or permitted activity related to hydroelectric power development, under section 401 of the Federal Water Pollution Control Act, P.L. 92-500, as amended. In making a decision as to whether to approve or deny such certification, the director shall:

(1) Solicit and consider the comments of all affected state agencies relative to adverse impacts on water quality caused by the project, according to sections 301, 302, 303, 306 and 307 of the Federal Water Pollution Control Act, P.L. 92-500, as amended.

(2) Approve or deny a certification only after making findings that the approval or denial is consistent with:

(a) Rules adopted by the Environmental Quality Commission on water quality;

(b) Provisions of sections 301, 302, 303, 306 and 307 of the Federal Water Pollution Control Act, P.L. 92-500, as amended;

(c) Standards established in ORS 469.371 and 543.017 and rules adopted by the Water Resources Commission and the Energy Facility Siting Council implementing such standards; and

(d) Standards of other state and local agencies that are consistent with the standards of ORS 469.371 and 543.017 and that the director determines are other appropriate requirements of state law according to section 401 of the Federal Water Pollution Control Act, P.L. 92-500, as amended. [Formerly 468.732]

**468B.045 Certification of change to hydroelectric power project; notification of federal agency.** Within 60 days after the Department of Environmental Quality receives notice that any federal agency is considering a permit or license application related to a change to a hydroelectric project or proposed hydroelectric project that was previously certified by the Director of the Department of Environmental Quality according to section 401 (1) of the Federal Water Pollution Control Act P.L. 92-500, as amended:

(1) The director shall:

(a) Solicit and consider the comments of all affected state agencies relative to adverse impacts on water quality caused by changes in the project, according to sections 301, 302,

303, 306 and 307 of the Federal Water Pollution Control Act, P.L. 92-500, as amended.

(b) Approve or deny a certification of the proposed change after making findings that the approval or denial is consistent with:

(A) Rules adopted by the Environmental Quality Commission on water quality;

(B) Provisions of sections 301, 302, 303, 306 and 307 of the Federal Water Pollution Control Act, P.L. 92-500, as amended;

(C) Standards established in ORS 469.371 and 543.017 and rules adopted by the Water Resources Commission and the Energy Facility Siting Council implementing such standards; and

(D) Standards of other state and local agencies that are consistent with the standards of ORS 469.371 and 543.017 and that the director determines are other appropriate requirements of state law according to section 401 of the Federal Water Pollution Control Act, P.L. 92-500, as amended.

(2) On the basis of the evaluation and determination under subsection (1) of this section, the director shall notify the appropriate federal agency that:

(a) The proposed change to the project is approved; or

(b) There is no longer reasonable assurance that the project as changed complies with the applicable provisions of the Federal Water Pollution Control Act, P.L. 92-500, as amended, because of changes in the proposed project since the director issued the construction license or permit certification. [Formerly 468.734]

**468B.048 Standards of quality and purity; factors to be considered; meeting standards.** (1) The commission by rule may establish standards of quality and purity for the waters of the state in accordance with the public policy set forth in ORS 468B.015. In establishing such standards, the commission shall consider the following factors:

(a) The extent, if any, to which floating solids may be permitted in the water;

(b) The extent, if any, to which suspended solids, settleable solids, colloids or a combination of solids with other substances suspended in water may be permitted;

(c) The extent, if any, to which organisms of the coliform group, and other bacteriological organisms or virus may be permitted in the waters;

(d) The extent of the oxygen demand which may be permitted in the receiving waters;

(e) The minimum dissolved oxygen content of the waters that shall be maintained;

(f) The limits of other physical, chemical, biological or radiological properties that may be necessary for preserving the quality and purity of the waters of the state;

(g) The extent to which any substance must be excluded from the waters for the protection and preservation of public health; and

(h) The value of stability and the public's right to rely upon standards as adopted for a reasonable period of time to permit institutions, municipalities, commerce, industries and others to plan, schedule, finance and operate improvements in an orderly and practical manner.

(2) Standards established under this section shall be consistent with policies and programs for the use and control of water resources of the state adopted by the Water Resources Commission under ORS 536.220 to 536.540.

(3) Subject to the approval of the department, any person responsible for complying with the standards of water quality or purity established under this section shall determine the means, methods, processes, equipment and operation to meet the standards. [Formerly 449.086 and then 468.735]

**468B.050 When permit required.** (1) Except as provided in ORS 468B.215, without first obtaining a permit from the director, which permit shall specify applicable effluent limitations and shall not exceed five years in duration, no person shall:

(a) Discharge any wastes into the waters of the state from any industrial or commercial establishment or activity or any disposal system.

(b) Construct, install, modify or operate any disposal system or part thereof or any extension or addition thereto.

(c) Increase in volume or strength any wastes in excess of the permissive discharges specified under an existing permit.

(d) Construct, install, operate or conduct any industrial, commercial, confined animal feeding operation or other establishment or activity or any extension or modification thereof or addition thereto, the operation or conduct of which would cause an increase in the discharge of wastes into the waters of the state or which would otherwise alter the physical, chemical or biological properties of any waters of the state in any manner not already lawfully authorized.

(e) Construct or use any new outlet for the discharge of any wastes into the waters of the state.

(2) As used in this section, "confined animal feeding operation" has the meaning

given in ORS 468B.205. [Formerly 449.083 and then 468.740]

**468B.055 Plan approval required; exemptions.** (1) Except as provided in subsection (3) of this section, all plans and specifications for the construction, installation or modification of disposal systems, treatment works and sewerage systems, shall be submitted to the Department of Environmental Quality for its approval or rejection pursuant to rules of the commission.

(2) No construction, installation or modification of the type described in subsection (1) of this section shall be commenced until the plans and specifications submitted to the department under subsection (1) of this section are approved. If the disposal or discharge is for a chemical process mine, as defined in ORS 517.953, such review and approval shall be included as part of the consolidated application process under ORS 517.952 to 517.987. Any construction, installation or modification must be in accordance with the plans and specifications approved by the department.

(3) By rule, the commission may exempt from the requirement of subsection (1) of this section the class or classes of disposal systems, treatment works and sewerage systems for which the commission finds plan submittal and approval unnecessary or impractical. [Formerly 468.742]

**468B.060 Liability for damage to fish or wildlife or habitat; agency to which damages payable.** (1) Where the injury, death, contamination or destruction of fish or other wildlife or injury or destruction of fish or wildlife habitat results from pollution or from any violation of the conditions set forth in any permit or of the orders or rules of the commission, the person responsible for the injury, death, contamination or destruction shall be strictly liable to the state for the value of the fish or wildlife so injured or destroyed and for all costs of restoring fish and wildlife production in the affected areas, including habitat restoration.

(2) In addition to the penalties provided for by law, the state may seek recovery of such damages in any court of competent jurisdiction in this state if the person responsible under subsection (1) of this section fails or refuses to pay for the value of the fish or wildlife so destroyed and for all costs of restoring fish and wildlife production in the affected areas, including habitat restoration, within a period of 60 days from the date of mailing by registered or certified mail of written demand therefor.

(3) Any action or suit for the recovery of damages described in subsection (1) of this section shall be brought in the name of the

**There is no Attachment F.**

**ATTACHMENT G**

**TO:** Environmental Quality Commission  
**FROM:** Joe Edney  
**SUBJECT:** Hearings Officer's Report - Proposed Amendments to OAR 340 Division 45, Surface Water Quality Standards for Bacteria.

A public hearing was held July 1, 1992, beginning at 11:00 a.m., at DEQ Headquarters, 811 S.W. 6th Avenue, Portland, Oregon, to receive testimony regarding the Department's proposal to reinstate the fecal coliform bacteria standards for a period of three years, and to reinstate the enterococcus bacteria standards at the end of the three year period. A summary of the oral and written testimony presented at the hearing, and the written testimony submitted during the public comment period (June 1, 1992 - July 1, 1992) are presented below. The summary is followed by a response to the testimony.

Oral and Written Testimony

1. Joe McLaughlin, President, League of Oregon Cities.

The League of Oregon Cities expressed concern that the enterococcus standard would require "superchlorination" of effluent to meet permit limits, and that this could potentially increase discharges of chlorinated organic compounds. The League is concerned about cost for enhanced disinfection facilities. It was suggested that a different indicator organism such as E. Coli bacteria would be more appropriate enterococcus bacteria. The League noted that there were no known public health problems resulting from inadequately treated and disinfected bacteria. The League recommended repeal of the enterococcus bacteria standard.

2. Garry Ott, Division Manager of Sanitary and Wastewater Treatment Plant and Greg Diloreto, Director, Department of Environmental Services, City of Gresham.

The City of Gresham, in oral and written testimony, supports the reinstatement of the fecal coliform standard. The city believes that the fecal standard is effective in protecting public health, enterococcus was intended to an in stream standard and not an end of pipe discharge standard, and the increased chlorine required to achieve an effective kill is contrary to the goal of reducing toxic discharges.

## Hearings Officer's Report

3. Mel Winkelman, Councilor, and Jim Hill, Wastewater Reclamation Administrator, City of Medford.

The City of Medford supports the reinstatement of the fecal coliform standard. The City believes that the fecal standard adequately protects public health, and that the enterococcus standard was adopted without demonstration of a disinfection process that would ensure compliance. The City believes that DEQ should work with permittees over the next three years to determine the most cost effective program that will provide public health protection.

4. Floyd Collins, Assistant Public Works Director, Public Works Department, City of Salem.

The City of Salem believes that there are serious deficiencies with the recently adopted enterococcus standard. The City believes the rule is based on insufficient analysis and limited data, and that the fiscal impact was not addressed at the time of rule adoption. The City also noted that DEQ didn't consider E. coli bacteria which would be equally protective of beneficial uses, the use of ranges in setting limits, or use of a mixing zone to provide dilution. Concerns were expressed about necessary and expensive treatment plant modifications and the potential for toxic discharges of chlorinated hydrocarbons.

The City of Salem supports the reinstatement of the fecal coliform standard but suggests elimination of the provision for future reinstatement of the enterococcus standard.

5. Gary Krahmer, General Manager, Unified Sewerage Agency.

The Unified Sewerage Agency supports adoption of the proposed rule to reinstate the fecal coliform bacteria standard for a three year period. The agency is concerned that the enterococcus standard does not correlate with swimming related illness, and that implementation of the standard will be extremely expensive. The agency is also concerned that the standard will result in chlorine discharges which may adversely impact other water quality standards.

The Unified Sewerage Agency supports the proposed rule amendment because reinstatement of the fecal coliform standard will ensure public health and environmental protection, which allowing an ongoing investigation of the applicability of the enterococcus standard.

## Hearings Officer's Report

### 6. Terry Smith, Chair, Oregon Association of Clean Water Agencies.

The Association of Clean Water Agencies submitted both oral and written testimony. The Association first noted testimony submitted in opposition to the proposed enterococcus standard adopted by the Commission in July 1991. This testimony stated that preliminary studies indicated that disinfection facilities would have difficulty in meeting the proposed standard, and that there was preliminary information which questioned EPA analyses regarding bacteriological criteria for marine waters. The testimony also stated that there was no evidence that the fecal coliform standard was causing any public health problems. The testimony also stated that the Department's fiscal impact review was faulty, and did not adequately address cost to local government.

The Association testimony stated there was a significant difference in results of sampling programs performed by DEQ and by several municipalities. The DEQ results indicated that sewage treatment plants would have little difficulty in meeting the enterococcus standard, but the results from sewage treatment plants indicated that there would be frequent problems in compliance with 20-30 percent of the wintertime samples exceeding the proposed standard.

The testimony described recent efforts to evaluate the enterococcus standard. This testimony stated that recent studies by EPA had been criticized for methodological errors and that new studies substantially completed will suggest that other organisms may be preferable to enterococcus. The testimony noted other problems with the enterococcus standard including apparent survivability and growth of enterococcus in soil and sediments, difficulty in achieving disinfection, potential environmental risk from increased chlorination, and cost associated with modification of disinfection facilities.

The Association of Clean Water Agencies concluded testimony by supporting the proposed rule amendment to reinstate the fecal coliform standard for a three year period. Association testimony indicated that questions regarding the selection of an appropriate indicator organism and numerical values could be answered in the near future, and that questions of cost, point of application and seasonal application were policy issues which could be explored soon. The Association stated that if enterococcus or another indicator organism were clearly shown to be the preferred indicator organism, and if numerical values were properly derived, the Association would support the development and implementation of the new standard.



## Hearings Officer's Report

7. Dan Helmick, Director of Fiscal Services and Mono Lapiere, Laboratory Supervisor, Tri-City Sewage Treatment Plant, Clackamas County

Clackamas County supports the testimony provided by the Association of Clean Water Agencies. Clackamas County also believes that DEQ should give strong consideration to adoption of an E. coli bacteria standard. Based on research recently completed in New Hampshire, an E. coli standard will work best for sewage treatment plant operators without compromising water quality.

8. Mark Yeager, Public Works Director, City of Albany.

The City of Albany supports the testimony of the Association of Clean Water Agencies, and supports the proposed rule amendments. The City believes recent evidence suggests that the new standard does not correlate well with swimming related illness, and that required sewage treatment plant improvements will cost "approximately one billion dollars."

9. Beau Vencill, Public Works Operations Supervisor, City of Philomath.

The City of Philomath submitted testimony supporting the position taken by the Association of Clean Water Agencies.

10. Katherine Schacht, General Manager, Metropolitan Wastewater Management Commission (MWMC).

MWMC expressed several concerns about the enterococcus standard, and supported the Department's proposal to reinstate the fecal coliform standard for the three year period. The agency stated that recent data collected by Oregon communities suggests that many sewage treatment plants would have difficulty in meeting the new standard which conflicts with earlier data presented by DEQ. MWMC noted that questions had been raised regarding the interpretation of EPA data. The agency noted that several studies are now underway which will give a better indication of the appropriateness of the enterococcus standard. Concerns were also expressed about the application point (end of pipe), costs, and possible discharge of chlorinated organic compounds.

## Hearings Officer's Report

11. William Keyser, Public Works Director, City of The Dalles.

The City of the Dalles supports the Department's proposed amendments to reinstate the fecal coliform standard, and continue investigating applicability of the enterococcus standard. The City supports the testimony submitted by the Association of Clean Water Agencies. The City further suggested that DEQ encourage communities to monitor enterococci to develop a good data base from which to make decisions.

12. Dave Leonard, Director of Public Works, Douglas County.

Douglas County does not believe that tests and analysis conducted to date have demonstrated that the enterococcus bacteria standard is more effective in protecting public health than the fecal coliform standard. The County noted that there will be significant costs to municipalities to implement the standard. Douglas County recommended withdrawal of the standard until there is more scientific evidence to support the enterococcus bacterial standard.

13. Cathryn Collis, Intergovernmental Programs Manager, Bureau of Environmental Services, City of Portland.

The City of Portland supports the Department's proposed amendments to reinstate the fecal coliform standard for a three year period to allow for further investigation of the applicability of the enterococcus standard. The City believes that the three year delay is necessary because there is conflicting information regarding applicability of enterococcus as an indicator organism, and it has not been demonstrated that the enterococcus standard provides better health protection than the fecal standard. The City also noted that data collected to date raises questions regarding implementation and attainability of the standard.

14. Kent Squires, General Manager, Oak Lodge Sanitary District.

The Oak Lodge Sanitary District supports the Department's proposal to reinstate the fecal coliform standard, and continued investigation to resolve questions regarding applicability of the enterococcus standard. The District noted that there has not been significant illness in Oregon from water contact recreation.

15. Bert Teitzel, Director of Public Works, City of Newberg.

The City of Newberg supports the proposed amendments to reinstate the fecal coliform standard.

## Hearings Officer's Report

16. Thomas Penpraze, Utility Operations Division Manager, Public Works Department, City of Corvallis.

The City of Corvallis supports the proposed amendments to reinstate the fecal coliform standard but does not support the reversion to the enterococcus standard after the three year period. The City instead recommends elimination of the enterococcus standard but that consideration be given to alternative indicator organisms after completion of research and analysis. The City expressed several concerns with the enterococcus standard including lack of scientific justification, inability to comply with the new standard without expensive treatment facility improvements, no known public health impacts resulting from inadequate treatment and disinfection, and potential for toxicity problems from increased use of chlorine and dechlorination chemicals.

## ATTACHMENT H

### RESPONSE TO TESTIMONY ON PROPOSED RULE REVISIONS TO REINSTATE FECAL COLIFORM BACTERIA STANDARDS

A total of seventeen cities, districts and associations provided testimony. Comments from testifiers were very similar and can be addressed as follows:

**Comment:** Several commenters stated that the technical basis underlying the selection of enterococcus bacteria as the appropriate indicator organism is flawed. Comments suggested that studies conducted by EPA lack scientific credibility and the data is questionable. Some testimony suggests that the Department's selection of numerical values and the application point at the end of the discharge pipe were not technically justified. There were also comments stating that data collected by individual communities and by the Department are in conflict. Department data concluded that the enterococcus standard could be met with existing facilities; community data concluded that substantial modification of facilities will be necessary.

**Response:** It appears that there is conflicting information regarding technical adequacy of studies which resulted in EPA's recommendations for the enterococcus bacteria standard. There are studies underway now which should provide additional technical information. Continued data collection should provide a more definitive data base for further evaluation, and from which to draw conclusions. The need for more technical information gathered from data, studies, etc. has prompted the Department's proposal to reinstate the fecal coliform standard for the next three years.

The Department does not believe that there are substantial differences in data collected by Department staff and by municipalities. Testimony stated that 20-30 percent of samples taken by municipalities during the winter exceeded the enterococcus standard. The Department analyzed 555 sewage treatment plant effluent samples from 1987 through January 1991. Twenty-one percent of the effluent samples exceeded the enterococcus standard. There are differences in the interpretation of that data however, particularly regarding the need for modifications to the disinfection facilities. The Department's view is that the facilities can meet the enterococcus standard with operational changes, that is, facility modifications will be minor or unnecessary. Many municipalities believe that very substantial and expensive modifications will be necessary, and that even with the modifications it will be difficult to meet the enterococcus standard. The Department believes that this issue should be resolved through continued investigation and analysis.

## Hearings Officer's Report

**Comment:** Some commenters stated that since the fecal coliform standard is effective in protecting public health, why change the standard? The State of Oregon has used fecal coliform bacteria as an indicator organism for many years and swimming related illness in Oregon is not common. It was also suggested that implementation of the enterococcus could have adverse impacts on public health, i.e., disinfection of enterococcus bacteria would require "superchlorination" and this could result in discharge of potentially toxic chlorinated hydrocarbons.

**Response:** The Department agrees that the fecal coliform standard is effective in protecting public health. EPA information indicated however, that enterococcus bacteria is a better indicator for protection of human health, particularly protection from swimming related illness. As suggested above, there is a need for additional research and evaluation.

**Comment:** There was extensive commentary regarding additional costs to comply with the enterococcus standard--required modifications of disinfection facilities would be very expensive. There were also comments suggesting that the Department did not adequately address cost impacts to local government in the fiscal impact statement.

**Response:** The Department agrees that facility costs and resulting fiscal impact are extremely important. The Department will work closely with municipalities to describe implementation costs in greater detail, regardless of which indicator organism is most appropriate for protection of human health and water quality.

**Comment:** The testimony supported both reinstatement of the fecal coliform standard, and further research and evaluation over the next three years. Some commenters suggested that there should be no provisions for automatic reinstatement of the enterococcus standard. Several commenters suggested that after research and evaluation is completed, the most appropriate standard should be selected for application.

**Response:** The Department generally agrees with the comments, and is recommending that after three years a report be presented to the Commission recommending adoption of the most appropriate indicator organism. The Department does not propose elimination of the enterococcus standard at this time but would rather wait until the research and analysis is complete before recommending further action.

## Environmental Quality Commission

- Rule Adoption Item  
 Action Item  
 Information Item

Agenda Item D  
July 23-24, 1992 Meeting

### Title:

Proposed Adoption of Rule Regarding use of Permit as a Shield Language in NPDES Permits

### Summary:

Federal law allows compliance with the conditions of an NPDES permits to be used as a shield against suit on violations of specific provisions of the clean water act that may not be specifically mentioned in the permit. Under this federal language, requirements from water quality standards (section 303), state law, and other state rules would not be shielded.

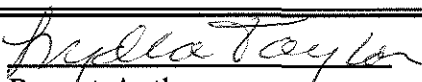
The department is proposing adopting rules that incorporate the federal language for such a shield so the regulated community can have certainty that if they are in compliance with their permit they cannot be sued for a violation of a new rule that has not yet been embodied in their permit or a requirement the Department chose not to include in their permit.

Much of the opposition to this action brought out in public hearing centered around shielding against violations of water quality standards and new regulations. The Department, relying upon the advice of the Attorney General, maintains that this language does not shield against new or modified water quality standards promulgated during the life of the permit, nor against any regulatory provisions not normally included within a permit, but would shield against any provisions normally included with permits but omitted by the department.

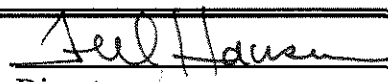
Existing rules, as well as the provisions of this rule, allow the Department to propose modifications to a permit during its term to address matters of concern not apparent or not addressed when the permit was issued, including the adoption of a new rule or standard. In adopting new rules or standards, the Commission can include specific provisions or schedules for implementation including direction on whether permits should be modified during their term.

### Department Recommendation:

Adopt the rules as presented in Attachment A of the staff report.

  
Report Author

  
Division Administrator

  
Director

REQUEST FOR EQC ACTION

Meeting Date: July 23, 1992

Agenda Item: D

Division: Water Quality

Section: Municipal Waste

**SUBJECT:**

A proposal to amend the Oregon Administrative Rules addressing water quality permits to include "permit as a shield" language in State issued National Pollutant Discharge Elimination System (NPDES) permits and Water Pollution Control Facilities (WPCF) permits.

**PURPOSE:**

Under the proposal, the Oregon Administrative Rules will be amended to reflect section 402(k) of the Federal Water Pollution Control Act. This section of the Federal Water Pollution Control Act allows permit language that protects permit holders from violations of water quality rules and regulations not included in the permit. The "permit as a shield" concept requires permit issuing authorities to include all relevant water quality rules in the permit. It also allows the permit holder to rely on the permit to contain all water quality limits, standards, and requirements that pertain to the permit holder.

The Department is not required to include language to allow permits to be used as shields, and has not done so in the past. The existing language in NPDES permits makes it clear that permits do not currently act as a shield, and reads as follows:

"This permit does not relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law, rule, standards, ordinance, order, judgement, or decree."

The Department is now proposing to adopt the federally allowed "permit as a shield" concept, with some modification. With the Department's increased emphasis on enforcement of permits, and the increased potential for lawsuits for NPDES permit holders, the Department believes it is reasonable for the Department to make the extra effort to include all relevant water quality rules in the permit.

**ACTION REQUESTED:**

- Work Session Discussion
  - General Program Background
  - Potential Strategy, Policy, or Rules
  - Agenda Item \_\_\_ for Current Meeting
  - Other: (specify)
  
- Authorize Rulemaking Hearing
- Adopt Rules
  - Proposed Rules Attachment A
  - Rulemaking Statements Attachment B
  - Fiscal and Economic Impact Statement Attachment C
  - Public Notice Attachment D
  
- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
  - Proposed Order Attachment \_\_\_
  
- Approve Department Recommendation
  - \_\_\_ Variance Request Attachment \_\_\_
  - \_\_\_ Exception to Rule Attachment \_\_\_
  - \_\_\_ Informational Report Attachment \_\_\_
  - \_\_\_ Other: (specify) Attachment \_\_\_

**DESCRIPTION OF REQUESTED ACTION:**

The proposal is to amend the Water Quality Permit rules to include "permit as a shield" language in State issued NPDES and water pollutant control facilities (WPCF) permits. Under the proposal, the Oregon Administrative Rules (OAR 340-45) will be amended to reflect section 402(k) of the Federal Water Pollution Control Act. Section 402(k) is the statutory provision which provides that compliance with a permit during its term constitutes compliance with the Clean Water Act, except for any toxic effluent standards and prohibition imposed under section 307 of the Clean Water Act, and standards for sewage sludge use or disposal under 405(d) of



the Water Pollution Control Act.

Currently there are no Oregon Administrative Rules (OAR) adopted which implement section 402(k) of the Water Pollution Control Act. The Department proposes to add an additional section (080) to OAR 340-45 titled "Effect of a Permit". The federal law allows permit language that protects permit holders from violations of water quality rules or regulations not included in the permit. The "permit as a shield" concept requires permit-issuing authorities to include all relevant water quality rules in the permit. It also allows the permit holder to rely on the permit to contain all water quality limits, standards, and requirements that pertain to the permit holder.

**AUTHORITY/NEED FOR ACTION:**

- Required by Statute: \_\_\_\_\_ Attachment \_\_\_\_\_  
                    Enactment Date: \_\_\_\_\_  
 Statutory Authority: \_\_\_\_\_ Attachment \_\_\_\_\_  
 Pursuant to Rule: \_\_\_\_\_ Attachment \_\_\_\_\_  
 Pursuant to Federal Law/Rule: FWPCA 402(k) Attachment E  
 Other: \_\_\_\_\_ Attachment \_\_\_\_\_  
 Time Constraints: (explain)

The proposed schedule of EQC decision by July 24, 1992, is to allow time for the amendment of several proposed permit renewals before September 30, 1992, EPA permit issuance deadline.

**DEVELOPMENTAL BACKGROUND:**

- Advisory Committee Report/Recommendation Attachment \_\_\_\_\_  
 Hearing Officer's Report/Recommendations Attachment F  
 Response to Testimony/Comments Attachment G  
 Prior EQC Agenda Items: (list) Attachment \_\_\_\_\_  
 Other Related Reports/Rules/Statutes: Attachment \_\_\_\_\_  
 Supplemental Background Information Attachment \_\_\_\_\_

**REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:**

Municipalities such as Cities, Service Districts and Sanitary Districts.

The proposed rule change will have no direct impact on the economics associated with the operation, maintenance, repair or replacement of the sewer collection system or wastewater treatment system of any permit holders. The proposed rule change could have an indirect positive impact on municipalities. This indirect impact is associated with a reduction in liability and a clearly stated understanding of the permit requirements. This rule change will hold harmless the permittee from Department enforcement and third party legal actions in cases where violation of effluent water quality rules have occurred and the permit does not identify the violated rules as a permit requirement. The cost saving is not known, but is not expected to be significant.

Small Business

The impact on the proposed rule amendment on small businesses which hold permits will be the same as those presented above.

Large Business

The proposed rule change will impact large businesses who hold permits in the same manner as described above.

Other State Agencies

Only a few state agencies now have facilities with separate treatment systems which require a permit. The impact on those permittees will be similar to the impacts described above.

**PROGRAM CONSIDERATIONS:**

The impact on the Department will be associated with a slight increase in staff time spent writing and reviewing permit documents before issuance, to assure completeness.

**ALTERNATIVES CONSIDERED BY THE DEPARTMENT:**

1. EQC could adopt the "permit as a shield" language, but allow the Department to open permits to include new rules or statutes adopted during the term of the permit.

2. EQC could decide not to adopt the permit as a shield language.
3. EQC could adopt the permit as a shield language directly patterned after the federal law.

**DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:**

The Department recommends that the EQC amend the rules to adopt "permit as a shield" language, with modification to allow adding new rules to permits during the term of the permit. With the increased enforcement effort by the Department, and increased third party lawsuits, the liability for permit holders has substantially increased in recent years. Given these changed conditions, the Department believes that it is reasonable to include all applicable rules in permits, so that the permit holder can rely on the permit.

The Department has historically written permits with two purposes in mind - to include specific requirements for each permittee such as effluent limits and monitoring requirements, and to provide notice of the significant rules that apply to the permit holder. Permits have been used in part as educational tools, where we advise the permittees of the most important rules that apply to them. While legally permit holders should be totally knowledgeable about what regulations apply to them, in fact both federal and state water quality laws are very long and complex. It is difficult for most permit holders to know what rules apply to them and how they apply. The Department believes that it is reasonable to make the extra effort to insure that all applicable water quality rules are included in the permits. In this manner, the permit holder more clearly knows what is required and expected, and the Department should expect to see greater compliance since the permit holder is more aware of what is required.

The Department does not anticipate that there are very many, if any, additional applicable rules that are not referenced in the permits now. A review of enforcement actions taken by the Department shows no enforcement actions against NPDES permit holders for rules outside of the permit. The proposed rule is not expected to impact the enforcement of Oregon's water quality rules.

Several commenters stated their preference for a proposed rule that strictly mirrors the federal shield law. The Department feels the federal shield rule unduly restricts

the Department's ability to act in a manner fully protective of the environment. As new information regarding environmental impacts of various activities and pollutants becomes available, the Department must be able to open permits to include new requirements to protect public health and water quality.

Other commenters stated their strong opposition to any shield rule, based on the belief that this would impose a significant and unreasonable burden on the Department and lead to increased pollutant discharges. As such, the proposed rule is contrary to the Department's mandate to protect and preserve water quality.

The Department disagrees with these assertions. The increased workload for the Department, if any, is not expected to be significant. The proposed rule will not interfere with the Department's ability to enforce fully protective permits.

**CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:**

The proposed rule language is not in conflict with the Department's strategic plan. The plan states that the quality of the environment is Oregon's "most valuable asset". The modifications to the federal shield law allow the Department to reopen a permit for modification for "cause" (for reasons of protection of public health and the environment). This modification addresses the concerns voiced by commenters opposed to the rule. The proposed rule change is consistent with the strategic plan, agency policy, and legislative policy.

**ISSUES FOR COMMISSION TO RESOLVE:**

1. Should the Department be required to include all applicable water quality rules in the permit, so that the permit holder can rely on the permit?
2. Should the Department be allowed to amend permits to include new rules or statutes adopted during the life of the permit?

**INTENDED FOLLOWUP ACTIONS:**

If adopted, the Department intends to implement this rule as permits come up for renewal.

Meeting Date: July 23, 1992  
Agenda Item: D  
Page 7

Approved:

Section: Barbara A. Burton  
Division: Lynea Taylor  
Director: Jul Hansen

Report Prepared For: Barbara Burton, Manager  
Municipal Wastewater Section

Report Prepared By: Joseph M. Edney, A.I.C.P.

Phone: (503) 229-6987

Date Prepared: July 10, 1992

JME:crw  
MW\WC10\WC10408  
7-9-92

NOTE:

The underlined portions of text represent proposed additions made to the rules.

The bracketed portions of text represent proposed deletions made to the rules.

**OAR 340-45-080**  
**EFFECT OF A PERMIT**

(1) Except for any toxic effluent standards and prohibition imposed under section 307 of the federal Clean Water Act (CWA), standards for sewage sludge use or disposal under 405(d) of the CWA, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with sections 301, 302, 306, 307, 318, 403, and 405 (a)-(b) of the CWA and Oregon Revised Statutes, Chapter 468B, Sections 030, 035, and 048, and implementing regulations, relating to effluent limitations, water quality standards and treatment system operation requirements. However, a permit may be modified, revoked or terminated during its term for cause as set forth in OAR 340 Division 45 including but not limited to such modifications as may be necessary to implement and enforce Oregon Statutes or regulations enacted subsequent to issuance of the permit.

(2) Compliance with permit conditions which implement a particular standard for sewage sludge use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standards for sewage sludge use or disposal pursuant to section 405(e) and 309 of the CWA.

**STATEMENT OF NEED FOR RULEMAKING**

Pursuant to ORS 183.335(7), this statement provides information on the Environmental Quality Commission's intended action to adopt a rule.

**(1) Legal Authority**

Oregon Revised Statutes (ORS) 468B.035 authorizes the Environmental Quality Commission to adopt rules which may perform or cause to be performed any and all acts necessary to be performed by the State to implement within the jurisdiction of the state the provisions of the Federal Water Pollution Control Act, enacted by Congress, October 18, 1972, and Acts amendatory thereof or supplementary thereto, and federal regulations and guidelines issued pursuant thereto. The Commission may adopt, modify, or repeal rules, pursuant to ORS 183.310 to 183.550, for the administration and implementation of the Act.

**(2) Need for the Rule**

Currently there is no Oregon Administrative rules (OAR) adopted which implement section 402(k) of the Water Pollution Control Act. This federal law allows permit language that protects permit holders from violations of water quality rules or regulations not included in the permit. The "permit as a shield" concept requires permit-issuing authorities to include all relevant water quality rules in the permit. It also allows the permit holder to rely on the permit to contain all water quality limits, standards, and requirements that pertain to the permit holder.

This proposed rules amendment will provide the Department with the ability to include "permit as a shield" language in the permit.

**(3) Principal Documents Relied Upon in this Rulemaking**

- Code of Federal Regulations (CFR) 40 CFR 122.5
- Federal Water Pollution Control Act Section 402(k)

These documents are available for review during normal business hours at the Department's office, 811 S.W. Sixth Avenue, Portland, Oregon, 97204.

**FISCAL AND ECONOMIC IMPACT**

1. **Municipalities such as Cities, Service Districts and Sanitary Districts**

The proposed rule change will have no direct impact on the economics associated with the operation, maintenance, repair or replacement of the sewer collection system or wastewater treatment system or any permit holder. The proposed rule change will have an indirect positive impact on municipalities. This indirect impact is associated with a small reduction in liability. This rule change will hold harmless the permittee from Department enforcement and third party legal actions in cases where violation of effluent water quality rules have occurred and the permit does not identify the rule as a requirement. The cost saving is not known.

2. **Small Business**

The impact of the proposed rule amendment on small business which hold permits will be the same as those presented above.

3. **Large Business**

The proposed rule change will impact large businesses who hold permits in the same manner as described above.

4. **Other State Agencies**

Only a few state agencies now have facilities with separate domestic treatment systems which require a permit. The impact on those permittees will be similar to the impacts described above.



"PERMIT AS A SHIELD"

Notice Issued: 7-1-92  
Comments Due: 7-1-92

WHO IS AFFECTED:

All domestic sewage, agricultural and industrial wastewater treatment facilities regulated under National Pollution Elimination System (NPDES) or Water Pollution Control Facilities (WPCF) permits issued by the Department of Environmental Quality.

WHAT IS PROPOSED:

The Department proposes to amend the Water Quality Permit rules to include "permit as a shield" language in State issued National Pollutant elimination System and Water Pollution Control Facilities permits.

WHAT ARE THE HIGHLIGHTS:

Under the proposal, the Oregon Administrative Rules will be amended to reflect section 402(k) of the Federal Water Pollution Control Act. This section of the Federal Water Pollution Control Act allows permit language that protects permit holders from violations of water quality rules or regulations not included in the permit. The "permit as a shield" concept requires permit issuing authorities to include all relevant water quality rules in the permit. It also allows the permit holder to rely on the permit to contain all water quality limits, standards, and requirements that pertain to the permit holder.

The Department is not required to include language to allow permits to be used as shields, and has not done so in the past. The existing language in NPDES permits makes it clear that permits do not currently act as a shield, and reads as follows:

"This permit does not relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law, rule, standard, ordinance, order, judgement, or decree."

The Department is now proposing to adopt the federally allowed "permit as a shield" concept. With the Department's increased emphasis on enforcement of permits, and the increased potential for lawsuits for NPDES permit holders, the Department believes it is reasonable for the Department to make the extra effort to insure that all relevant water quality rules be included in the permit.

**HOW TO COMMENT:**

Copies of the complete proposed rule package may be obtained from the Water Quality Division in Portland (811 S.W. Sixth Avenue) or the regional office nearest you. For further information contact Joseph M. Edney at 229-6987.

A public hearing will be held before a hearings officer at the following time and location:

July 1, 1992  
9:00 am  
Department of Environmental Quality  
Conference Room 3A  
811 S.W. Sixth Avenue  
Portland, Oregon

Oral and written comments will be accepted at the public hearing. Written comments may be sent to the DEQ, Water Quality Division, 811 S.W. Sixth Avenue, Portland, Oregon 97204, but must be received by no later than 5:00 pm, July 1, 1992.

**WHAT IS THE NEXT STEP:**

The Environmental Quality Commission may adopt rule amendments identical to the ones proposed, adopt modified rules as a result of testimony received, or may decline to adopt rules. The Commission will consider the act upon the proposed rules amendments at its July 24, 1992 meeting.

Attachments: Location of regional DEQ offices.

DEQ REGIONAL OFFICE LOCATIONS  
COPIES OF DOCUMENTS CAN BE VIEWED AND COPIED  
AT THE FOLLOWING LOCATIONS

HEADQUARTERS OFFICE  
811 S.W. Sixth Avenue  
Portland, OR 97204

EASTERN REGION OFFICE  
700 S.E. Emigrant, Suite 330  
Pendleton, OR 97801

CENTRAL REGION OFFICE  
2146 N.E. 4th  
Bend, OR 97701

NORTHWEST REGION OFFICE  
1500 S.W. First Avenue, Suite 750  
Portland, OR 97201

NORTHWEST REGION, ASTORIA BRANCH OFFICE  
Clatsop County Courthouse  
749 Commercial  
Astoria, OR 97103

WILLAMETTE VALLEY REGION OFFICE  
750 Front Street, NE, Suite 120  
Salem, OR 97310

SOUTHWEST REGION OFFICE  
201 West Main Street, Suite 2-D  
Medford, OR 97501

SOUTHWEST REGION, ROSEBURG BRANCH OFFICE  
1937 West Harvard Blvd.  
Roseburg, OR 97479

SOUTHWEST REGION, GRANTS PASS BRANCH OFFICE  
510 N.W. 4th, Room 76  
Grants Pass, OR 97526

SOUTHWEST REGION, COOS BAY BRANCH OFFICE  
340 N. Front Street  
Coos Bay, OR 97420

## FEDERAL WATER POLLUTION CONTROL ACT

**"Section 402 ... (k) Compliance with permits**

Compliance with a permit issued pursuant to this section shall be deemed compliance, for purposes of sections 1319 and 1369 of this title, with sections 1311, 1312, 1316, 1317, and 1343 of this title, except any standard imposed under section 1317 of this title for a toxic pollutant injurious to human health. Until December 31, 1974, in any case where a permit for discharge has been applied for pursuant to this section, but final administrative disposition of such application has not been made, such discharge shall not be a violation of (1) section 1311, 1316, or 1342 of this title, or (2) section 407 of this title, unless the Administrator or other plaintiff proves that final administrative disposition of such application has not been made because of the failure of the applicant to furnish information reasonably required or requested in order to process the application. For the 180-day period beginning on October 18, 1972, in the case of any point source discharging any pollutant or combination of pollutants immediately prior to such date which source is not subject to section 407 of this title, the discharge by such source shall not be a violation of this chapter if such a source applies for a permit for discharge pursuant to this section within such 180-day period..."

State of Oregon  
Department of Environmental Quality

## Memorandum

Date: July 10, 1992

**To:** Environmental Quality Commission

**From:** Barbara Burton, Hearing Officer

**Subject:** Hearing Officer's Report - A proposal to amend the Oregon Administrative Rules addressing water quality permits to include "permit as a shield" language in State issued National Pollutant Discharge Elimination System (NPDES) permits and Water Pollution Control Facilities (WPCF) permits.

A notice of public hearing was published June 1, 1992 and the public hearing was held July 1, 1992, beginning at 9:00 a.m., at DEQ Headquarters, 811 S.W. 6th Avenue, Portland, Oregon, to receive testimony regarding the proposed Oregon Administrative Rules amendment. Summaries of the oral and written testimony received at the hearing and during the 30 day public comment period are presented below.

ORAL AND WRITTEN TESTIMONY RECEIVED AT JULY 1, 1992, PUBLIC HEARING.

1. Councilperson Mel Winkelman - City of Medford:

Mr. Winkelman is the Vice-president of the Medford City Council and Chair of the Regional Committee which regulates the rates for the Medford Water Quality Control Plant, serving the communities of Phoenix, Jacksonville, Central Point, Medford and Bear Creek Valley Sanitary Authority. Mr. Winkelman's testimony did not directly address the proposed "permit as a shield" rule amendment. He did provide an insight into the concerns that his and other communities have for all rule making. The basic concern being the additional local costs of operation which often result from the State's actions in rule making and not providing a source of funds to support the implementation of such actions.

He has stated that local, state and federal funding has been stretched to its limits and suggests that the EQC considered the following points when taking any rule making actions:

- a. Why is the new rule being proposed if it isn't federally mandated?
- b. Is the rule being developed to resolve a problem that really should be addressed through proper enforcement of existing regulations?
- c. Is the proposed new rule really needed or are we changing an existing rule that is currently satisfactory merely "to be better"?
- d. Is there a sound scientific basis for the rule?
- e. What are the financial impacts of the rule as compared with its environmental benefit?
- f. What is the impact on local communities if the rule mandates a program without a funding source?

The City of Medford finds that many of the concerns regarding environmental regulations would be resolved if the EQC and local governments had a better understanding of the constraints under which each operates. In closing Mr. Winkelman invited the EQC to participate in a series of meeting in an informal setting between the EQC and local governments to better understand the constraints. These meeting should allow for a broad exchange of ideas and concerns.

2. Jim Hill, Wastewater Reclamation Administrator for the Medford Water Quality Control Plant:

Mr. Hill indicated that the City of Medford and its partners in the Medford treatment plant support the concept of the proposed rule amendment for implementation of "permit as a shield" language. He stated that DEQ must accept the administrative responsibility of ensuring that compliance with the NPDES permit conditions does in fact constitute compliance with the appropriate sections of the Clean Water Act.

The city requests that the proposed language be revised to match section 402(k) of the Federal Water Pollution Control Act by removing the last sentence in paragraph 1, effectively removing the language which allows for the amendment of a permit during the life of said permit due to rule changes. Such a change would provide the city with clear guidance and be mutually beneficial

Memo To: Environmental Quality Commission  
July 10, 1992  
Page 3

in the long run to both the regulating and the regulated communities.

3. Gareth S. Ott, Manager, Department of Environmental Services  
- City of Gresham:

The City of Gresham supports the "permit as a shield" concept and find that it is consistent with federal regulations. The city states that a permit is a "contract to perform" and it is paramount that:

- a. The conditions of the contract be stated precisely.
- b. That the conditions be contained in the contract.
- c. That the conditions not change without knowledge of either party.

The proposed "permit as a shield" language meets these criteria. The city believes the "permit as a shield" language in the permit will lead to the following benefits:

- a. Insures that relevant water quality rules will be assembled and included in one document (permit).
- b. Assures permit holder that changes in separate regulations will not lead to unknown or unforeseen enforcement.
- c. Allows for consistent planning and allocation of resources to meet requirements of the permit over the life of the permit.
- d. Consistent with industrial pretreatment language which is a part of the permit requirements.
- e. Allows DEQ to modify permits after formal procedure.

4. Gary A. Eide, City Manager - City of Salem:

The City supports adoption of the proposed language. Though this proposed language is not exactly like that appearing in section 402(k) of the Clean Water Act. It does represent a compromise position that, when taken as a package, can be supported by the City of Salem.

5. Gary F. Krahmer, General Manager - Unified Sewerage Agency (USA) of Washington County:

USA supports adoption of this proposed rule. USA states that the proposed rule does not relieve a permittee from compliance with any Federal, State, or Local water pollution control law, but rather provides the permittee a clear awareness of the standards it must adhere to, at the same time provides DEQ the power to modify a permit to address standards adopted during the life of the permit.

6. Katherine Schacht, General Manager - Metropolitan Wastewater Management Commission (MWMC):

MWMC supports the proposed rule change, indicating that such a change will benefit the NPDES permittees by clarifying the requirements for the permittee to comply with. The intent of this rule change is to ensure that compliance with the conditions of the permit will constitute the minimum requirements for the permittee to meet to avoid any liability.

7. Thomas M. Penpraze, Utility Operations Division Manager - City of Corvallis:

The City of Corvallis supports the Department's proposed "permit as a shield" rule. While it will make NPDES permits more lengthy, it will allow the permit holder to know explicitly what the compliance requirements are, as well as affording the permit holder some protection from unwarranted third party lawsuits.

8. Mark A. Yeager, P.E., Public Works Director - City of Albany:

Albany and many other permittees would prefer to have the full scope of the protection provided by the Clean Water Act. However, the rule proposed by the Department is acceptable in its proposed form.

9. R. Kent Squires, General Manager - Oak Lodge Sanitary District:

Municipal permittees will have the necessary information available for assuring compliance in a single document. Often times, this information has been lacking in the past simply due to ignorance. Permits will be much more voluminous and therefore



more complex but will provide appropriate protection, a significant benefit considering our litigious society. Overall, the District believes the proposed rule is a positive change in the municipal permitting process.

10. Bert S. Teitzel, P.E., Director of Public Works - City of Newberg:

The City of Newberg has reviewed the proposed rules as they may impact the City's NPDES permit. The city supports the proposed rules as drafted.

11. Beau Vencill, Operations Supervisor - City of Philomath:

The City of Philomath wholly supports the position of the Oregon Association of Clean Water Agencies regarding proposed revisions of "permit as a shield" rule.

12. Allen C. Shewey, P.E., Manager, Oregon Operations - Kramer, Chin & Mayo, Inc. (KCM):

Although permits do not currently act as a shield, many communities rely on the requirements of the permit and do not have the resources or knowledge base to envision every circumstance which might occur. For this reason, KCM believes allowing the permit to act as a shield is reasonable and prudent.

13. Daniel B. Helmick, Director of Fiscal Services - Clackamas County Department of Utilities:

Mr. Helmick expresses support for this rule change. It will provide more certainty and help to define the permittee's responsibilities. This proposed rule more fully provides for clearly defined responsibilities and also allows a defense to possible citizen suits that seek to impose through misinterpretation of broad permit language different statutes or requirements beyond the contemplation of DEQ or the permittee.

14. Terry Smith, Chair - Oregon Association of Clean Water Agencies:

The Association understands that there has been a tension between making permits complete versus keeping them short and that local governments have had mixed views about what balance to strike between these two. As a result of past experiences, however, a majority of ACWA members support the proposed rule.

Adoption of limited 402(k) permit provisions will improve permittee's knowledge of what they must accomplish to maintain permit compliance thereby enhancing protection of water quality. Failure to adopt this proposed rule will result in additional liability for local governments and substantially increased capital expenses without any improvement in water quality.

In the future, municipal NPDES permits will likely include more discharge limits than are currently listed as a result of this change. In the long run, there will be water quality benefits since the inclusion of a new parameter in a permit will tend to focus both DEQ staff and the permittee on the items that are important to water quality.

15. Cathryn Collis, Intergovernmental Programs Manager - City of Portland Environmental Services:

Although the proposed language does not provide protection to the extent adoption of the 402(k) language would, it is explicit and will inform the permit holders of new conditions with which they must comply. Some may argue that DEQ does not have the resources necessary to issue comprehensive permits containing all compliance requirements. If this is so, DEQ should not be issuing NPDES permits at all. The City strongly supports the proposed rule with the following comments.

a. Current permit language reads:

"Notwithstanding the effluent limitations established by this permit, no wastes shall be discharged and no activities shall be conducted which violate Water Quality Standards as adopted in OAR 340-41-xxx except in the defined mixing zones."

- b. An interpretation of that paragraph can be argued to apply to parameters that have been assigned effluent limitations which were calculated to meet Water Quality Standards, an interpretation inconsistent with the "permit as a shield" concept.
- c. EPA interpretation of 402(k) suggests that if the permittee operates their facilities in accordance with requirements of their permits, they are deemed to be in compliance with the Act and applicable State statutes. EPA-issued permits, in fact, cannot be unilaterally modified during the term of the permit.
- d. The Department's proposal provides for unilateral permit modification.
- e. Current permit language conflicts with the concept of "permit as a shield" and is unclear as to its intent. With or without "permit as a shield" language the following amended permit language is offered:

Except in conformity with the effluent limitations established by this permit, no wastes that are not authorized by this permit shall be discharged and no activities that are not authorized by this permit shall be conducted which violates Water Quality Standards as adopted in OAR-41-xxx except in the defined mixing zones.

16. Michael Graybill; 3570 Fossil Point Lane; Coos Bay:

Mr. Graybill does not support the concept of "permit as a shield". He feels that a permittee should not be relieved from compliance with any other water quality standard. He asks for an explanation of why the department is considering relaxing these rules.

He encourages the Commission to decline to adopt this proposed rule. Our government has too many loopholes as it is, there is no need to create new ones.

Memo To: Environmental Quality Commission  
July 10, 1992  
Page 8

17. James Fereday; 1017 Elm Ave.; Coos Bay:

Doesn't this proposal aim to allow more violations to occur because they (the permit holders) are able to hold up their "shield"?

Mr. Fereday urges the Commission to decline to adopt this proposed rule.

18. Quincy Sugarman, Environmental Advocate - The Oregon State Public Interest Research Group (OSPIRG):

OSPIRG opposes the proposed "permit as a shield" rule. Ms. Sugarman makes the following points:

- a. The State is not required to use the "permit as a shield" concept and suggests that use of same would lower Oregon water quality standards.
- b. The "permit as a shield" concept does not improve or protect environmental quality.
- c. The burden to be aware of environmental regulations should be placed on the potential polluters, not the State.
- d. Because the proposed addition of "permit as a shield" language takes a step away from the DEQ's role of protecting public health and the environment, OSPIRG oppose this proposal.

19. Bill Kloos; Law Offices of Johnson & Kloos; 767 Willamette St.; Eugene:

Mr. Kloos comments are submitted on behalf of the Lower McKenzie Water Quality Project an organization of area residents participating in the renewal of an NPDES permit held by the Weyerhaeuser Paper Company paper mill in Springfield, Oregon. Mr. Kloos expresses the belief that adoption of the proposed rule may affect his clients, as well as have a significant impact on the protection of the State's waters in general. He states that this action will turn the discharge of pollutants into the waters of the State into a right, rather than a privilege granted to those who demonstrate that they are polluting as little as they can, without harm to human health and the environment, and in

compliance with all relevant law. He makes the following points in the argument in opposition to approval of the proposed rule change:

- a. The state of Oregon need not make NPDES permits it issues a "shield" that will protect polluters from violations of water quality rules or regulations not included in the permit.
- b. Adopting the "permit as a shield" rule will turn the discharge of pollutants into the waters of the State into a right, rather than a privilege.
- c. The proposed rule will greatly increase the cost of issuing permits.
- d. The proposed rule needs to be clarified as to whether it would shield a polluter from enforcement action for discharging a pollutant not listed in the permit.
- e. If the proposed rule would shield a polluter from enforcement action for discharging a pollutant not listed in the permit the proposed rule will severely hamper the State's and the public's ability to take actions to stop the discharge of harmful pollutants not covered by a permit.
- f. Even if the proposed rule would not shield a polluter from enforcement action for discharging a pollutant not listed in the permit, the proposed rule would still seriously hamper the State's and the public's ability to quickly take actions to stop the discharge of harmful pollutants inadequately covered by the NPDES permit.

Mr. Kloos request time to present these objections to the Commission during the July 23rd and 24th Commission Session.

20. Carl F. Merkle, Jr., C. Peter Sorenson; William C. Carpenter, Jr. Attorneys at Law; Sorenson Law Office; P.O. Box 10836, Eugene:

This change would be bad public policy, detrimental to both the people and the environment of the State of Oregon. A permit holder should be responsible for not merely referring to the permit alone for guidance, but should be cognizant of all other protective measures which may apply to the facility. To require

any less would pose great risk to the receiving waters of the State, and would be a significant weakening of our current approach. Such backsliding should be rejected outright. The Department can offer no guarantee or reasonable assurance that all relevant water quality rules will be included in each and every permit. The reason given by the Department for suggesting this change, i.e. "increased potential for lawsuits for NPDES permit holders" and "increased emphasis on enforcement of permits", are frivolous. To change this rule would gut an important protective measure upon which Oregonians rely, and further imperil the priceless natural environment they rightfully treasure.

21. Karl G. Anuta - Northwest Environmental Defense Center,  
10015 S.W. Terwilliger Blvd., Portland and the Oregon  
Chapter of the Sierra Club:

These two groups vehemently oppose the inclusion of "permit as a shield" language in state issued NPDES permits.

They indicated a concern that this NPDES permit change reflects a trend by the Department away from assuring the health and safety of Oregon's waters and citizens and towards accommodating polluters/permittees. The "permit as a shield" approach, combined with prior backsliding in permit language and water quality standards appears to show either an "industry captured agency" or a deliberate willingness to "sell out" on the cleanliness of Oregon's waters based purely on economics.

There is a dispute over the EPA's interpretation of 402(k) and the U.S. Supreme Court holding [E.I. Dupont de Nemours & Co. v. Train, 430 U.S. 112 (1977)] that 402(k) does not allow deviations from water quality standards merely because a permit does not list a specific pollutant.

The "permit as a shield" approach will result in water quality degradation. The movement of the burden of proof from the permittee to the Department particularly when DEQ is already working within the constraints of Measure 5 budget cuts, this approach is absolutely untenable.

The "permit as a shield" language is inconsistent with established water quality practices in Oregon, as well as with DEQ's own strategic plan.

Memo To: Environmental Quality Commission  
July 10, 1992  
Page 11

DEQ has not presented adequate justification for the rule change, nor has the agency presented an adequate statement of fiscal impact. DEQ has not provided an adequate statement of need for the rule. NEDC's public record act request did not receive an accurate response. DEQ provided inadequate public comment opportunity.

For the foregoing reasons, NEDC and the Oregon Chapter of the Sierra Club express their shock, dismay, and outrage at the proposal to include "permit as a shield" language in state issued NPDES permits. NEDC and the Sierra Club urge DEQ and the EQC not to abandon Oregon's historical approach; not to abandon a substantive, water quality based approach because of procedural concerns of polluter/permittees; and not to abandon the agency's trust duties to the citizens of Oregon.

If DEQ does implement the proposed change, NEDC insists that DEQ concurrently expand monitoring using Whole Effluent Toxicity (WET) testing.

No other oral or written testimony was offered and the public hearing was closed at 10:30 a.m. July 1, 1992. Written comments were received until 5:00 p.m. July 1, 1992.

State of Oregon  
Department of Environmental Quality

Memorandum

Date: July 10, 1992

**To:** Environmental Quality Commission  
**From:** Barbara Burton  
**Subject:** Response to Testimony/comments - Permit as a Shield Hearing

There were twenty-one respondents that either presented oral or written testimony addressing the proposed "permit as a shield" rule. There were basically two points of view. Many permit holders submitted testimony supporting the proposed rule, but expressing preference for no modifications to the federal shield language. Other commenters are opposed to the shield in any form, as not protective of Oregon's waters. These issues are further discussed below.

1. **The proposed rule is supported, however preference is expressed that modifications to the federal shield concept be deleted.** These commenters prefer that the permit not be re-opened during the term of the permit in the event of new regulations or other causes.

Department response: Contrary to some of the comments received, the federal shield rule allows EPA to re-open permits for cause. The proposed rule makes clear that the Department also retains that right. It is true that the federal shield law prevents permits from being re-opened when new federal rules are adopted. However, the Department believes that it is important that the Department be able to re-open permits to include new rules. This is consistent with full protection of water quality. It also allows permit holders to be fully informed of the new rule that applies, since a formal permit modification will be required to include the new rule before it can be enforced.

2. **The Department is not required to have a shield law. It does not improve or protect environmental quality, and in fact is expected to have a serious negative impact on water quality.**

Department response: It is true that Oregon is not required to have a shield rule. However, the Department does not



agree that the proposed rule will have any significant impact on water quality. There may be some improvement in water quality based on the permit holder being better aware of what rules apply to him. With the proposed modifications to the federal shield rule, the Department believes that it will continue to have full authority to regulate and enforce all existing and new Oregon standards or limits.

3. **The burden of understanding and complying with federal and state water quality laws and rules properly belongs with the permit holder. This burden should not be shifted to the Department, particularly in light of measure 5 and limited Department resources.**

Department response: Federal and state water quality rules and regulations are very long and complex. Legally, permit holders should be knowledgeable of all rules and laws, and fully understand how they apply. In reality, however, most permit holders do not have full time environmental attorneys on staff and may not have a complete understanding of the rules that apply to them. The Department already assumes this burden in part by screening federal and state water quality rules and referencing the ones that apply to the permit holder in their permits. It is unlikely that there will be significant additional permit conditions needed in response to this rule. While the point expressed by the commenters is true in theory, in reality there will be little difference in the permits actually issued or the rules that are enforced.

4. **This proposed rule would allow permit holders to discharge pollutants not listed in their permits that violate instream water quality standards. These discharges could be toxic, and could cause serious environmental damage or endanger public health.**

Department response: The Department does not agree. The modifications to the federal shield rule proposed by the Department, coupled with existing (and future) permit language, prohibits such discharges and allows the Department to take appropriate enforcement actions. The current standard permit language which is included in all NPDES permits reads:

"Notwithstanding the effluent limitations established by this permit, no wastes shall be discharged and no activities

shall be conducted which violate Water Quality Standards as adopted in OAR 340-41-xxx [citation for river basin of receiving stream inserted] except in the defined mixing zone [each mixing zone is individually determined and assigned to each discharge point]."

5. **Several additional comments were made regarding the inadequacy of the rule making procedures and/or supporting documentation.** These include: inadequate justification for the rule change, inadequate statement of fiscal impact, inadequate statement of need for the rule, and inadequate public comment opportunity.

Department response: The Department believes that the requirements for rule making have been followed, both in spirit and legally.

6. **Several requests were made.** NEDC requested expanded monitoring using Whole Effluent Toxicity (WET) testing; Mr. Kloos requested time to present his objections to the Commission during the July 23rd and 24th Commission session; and Councilperson Mel Winkelman invited the EQC to participate in a series of meeting in an informal setting between the EQC and local governments to better understand the constraints each agency works under.

Department response: All requests have been forwarded to appropriate staff.

Environmental Quality Commission

- Rule Adoption Item
- Action Item
- Information Item

Agenda Item E  
July 23-24, 1992 Meeting

Title:

Approval or Revision of Oregon Department of Agriculture (ODA) plan for rural nonpoint source (NPS) pollution control in the Tualatin River Basin.

Summary:

The Oregon Dept. of Agriculture (ODA) is the designated management agency (DMA) with primary responsibility for development and implementation of the nonpoint source (NPS) management plan for rural sources in the Tualatin basin. Plans for control of nonpoint sources are required by DEQ's total maximum daily load (TMDL) rules.

In June of 1991, the EQC approved ODA's plan for one year. DEQ is to report to the EQC on implementation.

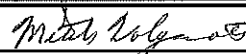
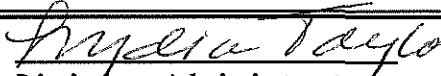
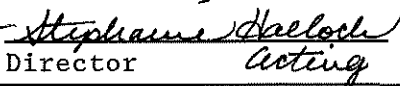
- 1) Progress has been made in identifying the extent of the problem caused by permitted combined animal feeding operations (CAFO). Not all CAFOs were inspected by June 1992, as directed by the EQC, and there is some question whether all will be in compliance by June of 1993. An aggressive program with DEQ assisting ODA and local government is recommended.
- 2) The container nursery program is working and the only revision recommended is a requirement to conduct inspections and report to DEQ before June 1993 on system installation and discharges.
- 3) Despite the progress on CAFOs and container nurseries, because of non-permitted animal operations ("hobby farms"), and upland and streambank erosion, which are addressed in the plan through voluntary measures, ODA is unable to provide "reasonable assurance" that NPS phosphorous loads allocated to rural sources can be achieved.

ODA has not pursued model ordinances with counties, as directed by the EQC. ODA and DEQ must continue to try and resolve these problems.

- 4) No funding mechanism has been identified to support ODA staff working on NPS pollution control in the Tualatin Basin. Amending HB 3213 could provide funding and authority to local soil and water conservation districts (SWCD) to carry out some of these functions. ODA and DEQ should assist Washington County in amending HB 3213.

Department Recommendation:

Re-approve plan through April 30, 1993

 Report Author	 Division Administrator	 Director
		<i>Acting</i>

REQUEST FOR EQC ACTION

Meeting Date: July 23-24, 1992  
Agenda Item: E  
Division: Water Quality  
Section: Surface Water

**SUBJECT:**

Tualatin River NPS Management Plan for Agriculture -- Status

**PURPOSE:**

At the June 14, 1991 Environmental Quality Commission (EQC, Commission) meeting, the Tualatin River Watershed Management Plan (Plan) for rural nonpoint source (NPS) pollution control was approved for a limited duration. The Department was directed to return the Plan to the Commission, after one year, to evaluate progress and determine future directions. This agenda item provides the Commission an opportunity to review progress and re-approve or modify the Plan.

**ACTION REQUESTED:**

- Work Session Discussion
  - General Program Background
  - Potential Strategy, Policy, or Rules
  - Agenda Item  for Current Meeting
  - Other: (specify)
  
- Authorize Rulemaking Hearing
- Adopt Rules
  - Proposed Rules Attachment
  - Rulemaking Statements Attachment
  - Fiscal and Economic Impact Statement Attachment
  - Public Notice Attachment



811 SW Sixth Avenue  
Portland, OR 97204-1390  
(503) 229-5696



Meeting Date: July 23-24, 1992

Agenda Item: E

Page 2

- |   |                                     |
|---|-------------------------------------|
| <input type="checkbox"/> Issue a Contested Case Order                     |                                     |
| <input type="checkbox"/> Approve a Stipulated Order                       |                                     |
| <input type="checkbox"/> Enter an Order                                   |                                     |
| Proposed Order  | Attachment <input type="checkbox"/> |
| <input checked="" type="checkbox"/> Approve Department Recommendation     |                                     |
| <input type="checkbox"/> Variance Request                                 | Attachment <input type="checkbox"/> |
| <input type="checkbox"/> Exception to Rule                                | Attachment <input type="checkbox"/> |
| <input type="checkbox"/> Informational Report                             | Attachment <input type="checkbox"/> |
| <input checked="" type="checkbox"/> Other: Oregon Dept. Ag. Progress Rpt. | Attachment <u>A</u>                 |

**DESCRIPTION OF REQUESTED ACTION:**

**Background**

The rules establishing Total Maximum Daily Loads (TMDLs) for the Tualatin River required the development of plans for the control of nonpoint source pollution (NPS) in the Tualatin Basin. These planning documents are intended to establish how designated management agencies (DMA), other agencies and agricultural operators will achieve established load allocations. The Oregon Department of Agriculture (ODA) is the DMA that the Commission has assigned primary responsibility for development and implementation of the Nonpoint Source Management Plan for rural sources in the basin. On June 14, 1991 the Commission reviewed, and approved for a period of one year, the Tualatin River Watershed Management Plan for rural nonpoint source pollution control. Because of concerns about the lack of a mechanism to ensure that NPS loads would be achieved and lack of a mechanism to provide stable program funding for the DMA, the Plan was approved only for a limited duration (one year) in order to "allow implementation of most elements of the ODA Plan to move ahead in the short term while, at the same time, allowing ODA and the Basin Counties to continue developing several elements of the Plan." Below is a chronological list of actions related to the Plan:

**Chronology of Events Related to the Agriculture Management Plan**

- 1988 Tualatin TMDL rules and requirement for management plans established (18 months allowed for development).
- 8/90 EQC defers action on agriculture management plan to give ODA time to make "substantial revisions". Twenty five conditions for approval specified -- most significant were enforcement and program funding.

- 11/90 Plan re-submitted to Department. Staff review indicated deficiencies still remained and would have to be corrected before Department to recommend approval to EQC. ODA asked to revise in following areas: clarify objectives and target dates; address stable program funding; identify enforceable alternatives that will be pursued if voluntary aspects of program fail.
- 3/91 Plan re-submitted to Department. Concerns related to funding and enforcement again noted. ODA & DEQ staff meet in April to discuss remaining issues.
- 5/91 Final Plan submitted. Detailed staff comments written. Condition seven, related to enforcement, identified as minimally addressed. Plan did not identify enforceable alternatives but stated ODA would "explore and examine the range of possibilities for various enforcement mechanisms" and develop recommendations before 1993 legislative deadlines. Condition 16, related to funding, also identified as minimally addressed. Plan did not identify stable program funding for DMA but did acknowledge the need and committed ODA to work toward development of funding.
- 6/91 EQC approved the Plan for one year after which DEQ was to assess progress and adherence to compliance schedule and bring the Plan back to the Commission.

See Completion and Implementation Schedule in June 14, 1991 Staff Report for specific requirements.

#### Progress to Date

Progress in implementation of the Plan has occurred in several areas. On April 4, 1992 ODA submitted a report detailing progress. The complete text of the ODA report is included as Attachment A to this staff report. Some highlights of the ODA report follow:

- ▶ Federal cost-sharing rates and eligible practices have been revised to broaden financial incentives to agricultural operations.
- ▶ The USDA Soil Conservation Service (SCS) has established a Water Quality Hydrologic Unit Area (HUA) in the Dairy-McKay sub-basin within the Tualatin River Basin. This special program brings additional federal cost share and technical assistance to agricultural

operators in the basin. The area covers about half of the agricultural land and almost half of the forest land in the basin.

- ▶ Permitted confined animal feeding operations (CAFO) have been inventoried and an aerial survey has been conducted; results have been used to set priorities. Nine CAFOs have been inspected. All were found to be in non-compliance with permit conditions and are in various stages of negotiation with ODA to establish stipulated final orders (SFO) to bring the operations into compliance.
- ▶ Inventory of non-permitted livestock operations is about 50% complete (95% complete in the HUA).
- ▶ Of 83 container nursery operations that have submitted "letters of intent" to ODA, 76 indicated summer irrigation water discharges were eliminated by May 1, 1992. Of the remaining operations, all but one intend to eliminate summer discharges by the TMDL compliance date (June 1, 1993).
- ▶ Approximately 12,000 acres of highly erodible cropland in the basin have been brought under federal Food Security Act commodity programs that require development of conservation plans for eligibility. Soil erosion on these lands has been reduced by about 26,600 tons.
- ▶ Oregon State University Extension Service has conducted a landowner survey to help target information and education resources.

Even though progress has been made in some areas, significant concerns about the ability to implement the Plan as written remain. Some of the items specified in the Completion and Implementation schedule approved by the EQC in June of 1991 have not been accomplished. Details are provided under Program Considerations below.

#### EQC Action Requested

The Commission is provided the opportunity to take final action on the Tualatin River Watershed Management Plan for rural NPS pollution control. The Commission can fully approve the Plan as written, specify required modifications of the Plan, or re-approve the Plan for a limited duration.

Meeting Date: July 23-24, 1992  
Agenda Item: E  
Page 5

**AUTHORITY/NEED FOR ACTION:**

Required by Statute: \_\_\_\_\_ Attachment \_\_\_\_\_  
                  Enactment Date: \_\_\_\_\_  
 Statutory Authority: \_\_\_\_\_ Attachment \_\_\_\_\_  
 Pursuant to Rule: OAR 340-41-470 (3) Attachment B  
 Pursuant to Federal Law/Rule: \_\_\_\_\_ Attachment \_\_\_\_\_  
 Other: \_\_\_\_\_ Attachment \_\_\_\_\_

Time Constraints: (explain)

The Completion and Implementation Schedule for the Oregon Department of Agriculture, adopted by the Commission in June of 1991, required that the Management Plan be returned to the Commission after one year to review progress and consider re-approval or modification.

**DEVELOPMENTAL BACKGROUND:**

Advisory Committee Report/Recommendation Attachment \_\_\_\_\_  
 Hearing Officer's Report/Recommendations Attachment \_\_\_\_\_  
 Response to Testimony/Comments Attachment \_\_\_\_\_  
 Prior EQC Agenda Items: (list)

June 14, 1991 EQC Agenda Item I Attachment C

This Staff Report and attachments specify the conditions for approval of the Plan and details the completion and implementation schedule.

Other Related Reports/Rules/Statutes: Attachment \_\_\_\_\_  
 Supplemental Background Information: Attachment \_\_\_\_\_

**REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:**

The June 14, 1991 EQC Agenda Item I (Attachment C) stated "ODA has expressed uncertainty as to (a) how adequate authority might be developed for a mandatory phase of plan implementation and enforcement (b) obtaining long-term stable program funding, and (c) which agencies should be responsible for maintenance and exercise of these program elements." These uncertainties apparently continue to exist.

**PROGRAM CONSIDERATIONS:**

There are a number of Tualatin River TMDL and NPS program considerations of importance. They are discussed individually below in the order they were addressed in the June, 1991 Completion and Implementation Schedule.



Meeting Date: July 23-24, 1992  
Agenda Item: E  
Page 6

## Confined Animal Feeding Operations

### June 1991 EQC Direction

ODA should "administer an accelerated enforcement program" for CAFOs in the basin "with each inspected for compliance by June, 1992 and all in compliance by June, 1993."

### Status as of June 1992

ODA has completed an aerial survey of 52 CAFOs in the basin and has used the survey to group operations in three priorities. #1 priority has "high probability or near certainty" of violation of more than one permit condition -- there are 25 operations in this category. #2 priority may violate one or more permit condition -- 17 operations are in this category. #3 priority has relatively lower probability of permit violation -- there are 11 operations in this category.

ODA has inspected nine CAFOs in the basin since June 1991. Six of these are in the #1 priority, all six resulted in issuance of a Notice of Non-Compliance (NON). Stipulated Final Orders (SFO) have been negotiated for three. One operation in the #2 category has been inspected resulting in an NON and SFO. Two operations in the #3 category have been inspected. Both resulted in NONs, one has an SFO.

Animal waste management systems are in the planning stages on the nine permitted operations that were inspected. Initiation of planning and engineering is pending on three additional permitted operations.

There is insufficient information at the present time to estimate the portion of the total phosphorus load that is being contributed by out-of-compliance CAFOs. It is likely, however, that this source represents a substantial portion of the load. This has been demonstrated by sampling up-stream and down-stream of some individual operations. For example, on one sampling day, one operation (which ODA already has under an SFO), had a total phosphorus concentration up-stream of 0.09 mg/l, while down-stream of that operation the total phosphorus concentration was over

9.0 mg/l -- an increase of two orders of magnitude. DEQ's assessment of nonpoint sources of pollution has also indicated serious bacterial pollution problems in some tributaries of the Tualatin River. Control of CAFO discharges would also reduce this problem.

#### Recommended Actions

- ▶ Urge local SWCDs and CAFO industry representatives to work pro-actively to quickly solve CAFO related pollution problems in the Tualatin Basin. Soil Conservation Service and SWCD personnel and resources in the area are limited. However, operators can hire private consultants, to assist, as needed, in the design of waste management systems. Clarify state policy that CAFOs found to be violating permit conditions and/or polluting waters of the state will be subject to civil penalty just as other industries are.
- ▶ Begin an accelerated effort to assure that all CAFOs in the basin come into compliance. This effort should include: Hold a public hearing and/or send notices to all permitted CAFOs informing them of the results of ODA's aerial survey and of intent to begin inspection of CAFOs. Urge operators to review their permits and, if they are not fully in compliance with their permit, contact ODA to voluntarily negotiate a SFO to eliminate surface discharge by June, 1993 and achieve full compliance with permit requirements within a reasonable time. Strongly recommend that operators voluntarily enter into a SFO with ODA as quickly as possible.
- ▶ Clarify that for purposes of the Tualatin TMDL program compliance means, and priority will be given to, elimination of summer season surface discharge (or runoff) to waters of the state, or to any ponds, ditches, or canals connected to waters of the state by June 1, 1993, AND schedules for full compliance with all other permit conditions are in place by June 1, 1993. Compliance with Tualatin TMDL requirements does not relieve operators of responsibility to comply with all other CAFO requirements.

Meeting Date: July 23-24, 1992  
Agenda Item: E  
Page 8

- ▶ Examine CAFO General Permit conditions for enforceability and, as necessary, modify permit language to facilitate better enforcement.

## Container Nurseries

June, 1991 EQC Direction

ODA to implement the Container Nursery Irrigation Water Management Plan by the dates outlined in that plan.

Status as of June, 1992

Eighty-three container nurseries and greenhouse operations in the Tualatin Basin have submitted letters of intent. ODA is verifying that this is all the operations in the basin. Of those, seven have indicated they will have discharges after May 1, 1992. Six of the seven, have indicated that discharges will be eliminated by June, 1993. ODA has expressed willingness to inspect all container nurseries in the basin but is not certain it has the necessary resources. If actual on-the-ground inspections do not occur there will be no assurance that the operations have actually eliminated discharges. Operations found to have discharges after June, 1993, but have not obtained a permit will be referred to DEQ.

Prior to implementation of the container nursery program, container nurseries totaling approximately 735 acres were discharging. By May, 1992, 346 acres (47%) had eliminated discharges. By June, 1993, an additional 383 acres are expected to eliminate discharges (total of 99% of acreage controlled). Although difficult to quantify, this represents a substantial reduction in phosphorus contribution. In one example, monitoring up stream of a container nursery on a tributary stream demonstrated a Total Phosphorus concentration of 0.04 mg/l. On the same day at a down stream site the concentration was 1.6 mg/l.

#### Recommended Actions

- ▶ The container nursery program is progressing but some uncertainty exists regarding inspections. No substantial revisions are recommended at this time. However, there should be a clear requirement to evaluate installation of management systems (inspection) with a report submitted to DEQ, before June 1993, indicating whether or not systems are properly installed and discharges have been eliminated for each operation.

#### Other Nutrient and Erosion Controls

##### June, 1991 EQC Direction

Other nutrient and erosion controls (including non-commercial farm operations, nutrient management, upland erosion controls, and stream bank stability problems) are addressed in the management plan through voluntary measures. The Department and EQC were concerned about the inability to ensure that reductions in pollution from these sources would occur. Federal guidance for TMDL implementation requires that when loads are assigned to nonpoint sources "there must be reasonable assurances that nonpoint source reduction will in fact be achieved." When this is not possible, the load must be assigned to point sources.

ODA was directed to work with the counties to begin, by March 1, 1992, development of model enforceable ordinances which were to be available for implementation, if necessary, by January of 1993.

##### Status as of June, 1992

Non-Permitted Animal Operations: Inventories of non-permitted livestock operations are not yet complete. Indications are that there are many more operations than anticipated. These operations are not currently regulated and, in most cases, are not eligible for federal cost share dollars for installation of waste handling systems. Many of these "hobby farms" have limited space and poor grazing practices leading to erosion and animal waste management problems. Most of these operations involve cattle and/or horses. Of some 417 operations so far identified, 3 are in the planning

Meeting Date: July 23-24, 1992  
Agenda Item: E  
Page 10

stages of development of animal waste management systems. Initiation of planning and engineering is pending on one operation. The four SWCDs in the basin have received a grant, through ODA's Natural Resources Division, to implement waste management, nutrient and erosion controls on a group of small farms. DEQ has also requested, and EPA has tentatively approved, funding for a small farm animal waste handling demonstration project in the Tualatin basin to be conducted by Oregon State University.

The magnitude of impact from these non-commercial farms is impossible to predict with current information. However, it is significant. One study, in the Portage Creek watershed in Washington State, estimated that the magnitude of nonpoint pollution from 202 non-commercial operations was roughly equal to the impact of the 28 commercial farms present in the same watershed. This was true even though the commercial farms had twice as many animals in total.

Erosion: ODA's status report (Attachment A) states that voluntary erosion control planning and implementation "has been ongoing in the Tualatin basin for a long time, through the efforts of the Soil and Water Conservation Districts, SCS, ASCS," and other means. However, erosion continues to be of concern in the basin. Within the Dairy-McKay Hydrologic Unit Area, which covers roughly half of the rural agricultural land, and almost half of the forest land in the basin, SCS estimates that approximately 27% of the land currently erodes at greater than three times the soil loss tolerance for the specific soils involved. Phosphorus and other pollutants can move via this pathway to waters of the state. It is difficult to separate the proportion of the phosphorus load that originates from erosion from loads associated with other rural nonpoint sources. In addition to nutrient problems, DEQ's assessment of nonpoint source pollution has identified turbidity, temperature, and sediment problems in the Tualatin and its tributaries. All of these concerns are related to erosion.

Most upland erosion control on agricultural lands has occurred on highly erodible lands (HEL) participating in commodity programs through the Food Security Act (FSA). In order to be eligible for the FSA programs

Meeting Date: July 23-24, 1992  
Agenda Item: E  
Page 11

these lands must have a conservation plan in place. Of the approximately 12,000 acres of HEL land in the basin, practices have been applied to approximately 4200 acres (35%) reducing erosion by some 26,600 tons.

Inventories of streambank erosion sites have not been completed. Control measures are in planning or pending on 7 sites in the basin.

One meeting was held during the past year to discuss development of model erosion and sediment control ordinances. Representatives of SWCDs and Counties in the Tualatin Basin were present. ODA was to take the lead. No further meetings involving local governments have been held. ODA has indicated that they will not take the lead in development of model ordinances further.

A May, 1992 National Association of Conservation Districts report identifies 26 states, plus the District of Columbia and Virgin Islands, that have laws related to control of erosion and sediment. Some of these regulations apply only to development. Others apply to agriculture as well. "These laws contain provisions for enforcement of conservation requirements such as: approved erosion and sediment control plan required for land-disturbing activities; approved plan required for issuance of a permit for an activity involving land-disturbing activities; requirement for compliance with established permissible soil loss limits....An important characteristic of most of these laws is the provision for cooperation and coordination among the various state agencies concerned with soil and water conservation and water quality, and between state agencies and local units of government." Some of these regulations are intended to protect water quality and are compatible with the agricultural industry. ODA and DEQ have many of these laws on file and could use them as models.

**Nutrient Management:** Fertilizer and other nutrient management is being addressed through education programs. The OSU Extension Service is coordinating planning for a day long operator workshop on phosphorus and its management to be held in December 1992.

#### Recommended Action

- ▶ Under current structure, ODA cannot provide "reasonable assurance" that NPS phosphorus loads allocated to rural sources, exclusive of CAFOs and container nurseries, will be achieved. DEQ and ODA should continue discussions to better clarify roles, responsibilities, and actions that will lead to assurance that NPS pollution will be reduced.

#### Program Funding

##### June, 1991 EQC Direction

ODA was to begin development of stable funding to support their own staffing needs to carry out their DMA responsibilities in the Tualatin Basin.

##### Status as of June 1992

ODA has not identified a funding mechanism to support ODA staff working on NPS pollution control in the Tualatin Basin. Staff positions and implementation funds for the ODA NPS program were requested by ODA in the 1991/93 biennium, but were not approved. Other funding options have not been pursued directly. ODA is, however, supporting Washington County SWCD's efforts to amend House Bill 3213 from the 1991 Legislative Session. This bill, if appropriately amended, could provide some funding and authority to local SWCDs to carry out some NPS control functions in TMDL basins.

#### Recommended Action

- ▶ DEQ and ODA should continue discussions of potential solutions including clarification of roles and responsibilities.
- ▶ ODA and Washington County SWCD should involve DEQ in development of language to revise HB 3213 to maximize potential to provide adequate funding and authorities.

**ALTERNATIVES CONSIDERED BY THE DEPARTMENT:**

1. Approve Plan Without Change:

ODA would continue to have responsibilities for which they have no authority or funding. The requirement to provide reasonable assurance that NPS loads are met could not be achieved.

2. Require Modification of Plan:

The Commission could require the designated management agency (ODA) to modify the Plan to address the concerns that have been raised. This may require further delay of implementation while the Plan is revised and may not lead to resolution of issues. ODA may not have the necessary authorities and resources to adequately modify the Plan.

3. Approve Plan for a Limited Duration

The Commission could re-approve the Plan for a limited duration in a similar action to the one taken a year ago. This would allow implementation to proceed while providing the Department and ODA one final opportunity to adjust roles, responsibilities and funding in a way that will make authorities and resources consistent with the responsibilities of the agencies. In addition, a review of the Tualatin Basin Data and load allocations should be completed in March, 1993. The re-approval could expire at the end of April, 1993 after data and load allocations have been reviewed. The Plan could then come back before the Commission of final approval.

**DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:**

The Department recommends Alternative 3.

This alternative would allow ODA to continue to provide technical assistance to CAFO and container nurseries in the Tualatin Basin. DEQ already has the authority to begin inspection of CAFOs to ensure compliance of these operations by June, 1993. ODA and DEQ could work together to revise/update work plans related to CAFOs, revise CAFO permit conditions as necessary, and investigate compliance inspection fees to accelerate compliance.



Meeting Date: July 23-24, 1992  
Agenda Item: E  
Page 14

Soil and Water Conservation Districts, in conjunction with USDA Soil Conservation Service have expertise in erosion and runoff control. Counties have authority to pass and implement ordinances. The SWCDs and counties could be encouraged to work closely together to quickly develop and implement measures to provide reasonable assurances that NPS reductions will occur to meet the loads. DEQ could assist in this effort.

**CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:**

Review of the watershed management plan is mandated by Commission rule. Actions contained in the Plan and recommended in this staff report are consistent with the EPA approved Nonpoint Source Statewide Management Plan for Oregon.

**ISSUES FOR COMMISSION TO RESOLVE:**

1. Whether re-approval, for a limited duration, of the Tualatin River Watershed Management Plan for rural NPS pollution control is an appropriate action for the Commission to take.

**INTENDED FOLLOWUP ACTIONS:**

If the Department recommendation is accepted, DEQ would proceed with implementation of the recommended actions listed under "Program Considerations," unless the Commission directs otherwise.

Meeting Date: July 23-24, 1992  
Agenda Item: E  
Page 15

Approved:

Section:

Andrew Z. Schaedel  
Andrew Schaedel

Division:

Lydia Taylor  
Lydia Taylor

Director:

Stephanie Hallock  
for Fred Hansen

Report Prepared By: Mitch Wolgamott

Phone: 229-6691

Date Prepared: June 24, 1992

MW:crw  
SW\WC10\WC10394.5  
7-7-92

# Oregon

DEPARTMENT OF  
AGRICULTURE

April 3, 1992

Andy Schaedel  
Department of Environmental Quality  
811 SW Sixth Avenue  
Portland, OR 97204

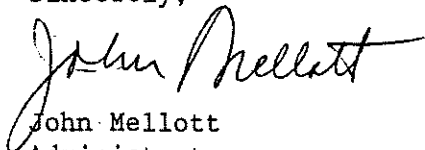
Dear Andy:

Enclosed please find information summarizing the agricultural implementation efforts for both the regulatory and voluntary aspects of the program to date in the Tualatin River basin. After your staff has had an opportunity for review, we would welcome the opportunity to meet with you to discuss the information. Early in the week of April 13 would be a good choice.

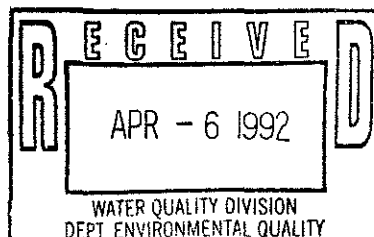
Combined with the traditional base program resources available through USDA programs at the Soil and Water Conservation Districts in the counties and the additional significant level of resources which have been dedicated to the aggressive acceleration of implementation of nonpoint source pollution controls from agricultural lands in the basin over the past several years, there is a clear commitment on the part of agriculture to improve water quality in the basin. As you are aware, continued significant additional resources have been dedicated to the Hydrologic Unit Area throughout the life of this five year project.

Agricultural agencies involved in the nonpoint source water quality implementation program feel that the availability of technical, cost-sharing, and educational assistance in the basin provides tremendous incentives for voluntary participation, and that significant source load reductions of bacteria, pesticides, sediment, and associated nutrients - including phosphorus - will be accomplished. The Agricultural agencies involved feel that the voluntary aspects of the program needs to be continued and be given adequate time to be implemented.

Sincerely,



John Mellott  
Administrator  
Natural Resources Division  
378-3810 / 378-2950 FAX



Barbara Roberts  
Governor



635 Capitol Street NE  
Salem, OR 97310-0110

WHY ARE WE DOING THIS?

Since 1988, an extensive agricultural interagency cooperative effort has been underway to plan and implement an aggressive program of nutrient and erosion control in the interest of water quality improvement in the Tualatin River basin. This effort has greatly accelerated the implementation of soil and water conservation practices and carries a new focus on water quality.

Efforts to reduce agricultural nonpoint sources of pollution in the Tualatin basin have been undertaken to assess problems and address resource concerns as well as maintain a stable economic stature for the agricultural industry in the basin. The goal of implementation is to protect the waters of the basin from agricultural residuals such as bacteria, pesticides, sediment, and associated nutrients - especially phosphorus.

Cooperating agencies which have been directly involved in agricultural program planning and implementation on individual operations include the Soil and Water Conservation Districts in the affected counties, the USDA Soil Conservation Service, the USDA Agricultural Stabilization and Conservation Service, the Oregon State University Extension Service, the Department of Environmental Quality, and the Oregon Department of Agriculture.

In the interest of assuring an integrated, basinwide approach to water quality enhancement in the basin, planning and implementation efforts have also moved forward in cooperation with other federal, state, local, and private agencies and interests with various roles and responsibilities for nonpoint source pollution control. Cooperating agencies and jurisdictions include Unified Sewerage Agency, Washington County Department of Land Use and Transportation, Clackamas County Department of Utilities, Multnomah County Planning Department, the Oregon Department of Forestry, the Oregon Graduate Institute, US Geological Survey, Tualatin Valley Irrigation District, and the Oregon Water Resources Department.

WHAT AGRICULTURE HAS BEEN AND IS DOINGAllocated Resources

Significant federal, state, local, and private resources have been dedicated to agricultural water quality planning and implementation efforts since 1988, and particularly over the past two years. These include:

	'87	'88	'89	'90	'91	'92 <sup>1</sup>
Technical assistance (FTE)	2.5	2.5	3.0	4.6	7.1	7.3
Administration (FTE)	.75	.75	.75	1.25	1.25	1.25
Information and ed (FTE)	.25	.25	.5	.5	.8	1.75 (2)
Federal cost-share \$	34,000	17,000	45,000	122,000	332,000	87,500
Private cost-share \$	59,000	41,000	68,000	81,500	394,000	742,000 (3)
Monitoring/research \$		5,000		100,000		35,000

Significant additional resources have been dedicated to agricultural water quality implementation efforts through the work of cooperating agencies such as those mentioned above. The amount of these resources which have been contributed is significant, and is in addition to the above figures.

Program enhancements

The Washington County Agricultural Stabilization and Conservation Committee has revised federal cost-sharing rates and available practices in the county, broadening the financial incentives which are available to agricultural operators for the installation of conservation practices, including practices for nutrient and pesticide management. These changes provide further encouragement for voluntary participation in this water quality enhancement program.

The Washington County Soil and Water Conservation District has been pursuing revisions to House Bill 3213, 1991 legislation which would provide authority for Soil and Water Conservation Districts in water quality limited basins to collect fees for NPS planning and implementation and to create ordinances for control of specific nonpoint source pollution problems arising from agricultural land uses. It is anticipated that revisions currently being considered will result in the presentation of an amended bill in the 1993 legislature.

The Washington County SWCD has been successful in streamlining the permit process for instream activities such as streambank erosion control projects. Regional permits are now available from the Division of State Lands and the Army Corps of Engineers, and the Washington County Planning Department has reduced permit fees from over \$500 to \$38 for plans which have been engineered by SCS staff. This will greatly aid in encouraging streambank erosion control and restoration projects.

<sup>1</sup>Projected

(2) Signoffs as of 3/92. 6  
 (3) Projected as of 3/92

total for the year are available.

The Tualatin Valley Irrigation District is promoting the increased use of their irrigation scheduling service, and is working to promote incentives for operators to utilize this service.

### Implementation

The intent of implementation efforts over the past two years has been to focus on the reduction of sources of pollution originating from agricultural land uses which have the potential to deliver the highest loadings of nutrients, bacteria, pesticides, and/or sediment to the waters of the basin. While addressing these high priority potential sources, a second objective has been to aggressively address those potential sources for which instream impacts are not immediately known, while at the same time, conducting research and monitoring activities to attempt to determine the extent and significance of these sources and their possible instream effects on water quality in the Tualatin basin.

On-the-ground implementation efforts to date have focused on animal waste management and animal waste system planning, elimination of discharges from container nurseries, control of erosion on inadequately protected uplands, and control of streambank erosion. Implementation efforts, activities, and progress for each of these categories is detailed below:

#### Livestock operations

Efforts to provide technical, cost-sharing, and educational assistance have focused on larger commercial operations in the basin, particularly operations which hold Water Pollution Control Facilities (WPCF) permits issued by the Department of Environmental Quality. Non-permitted commercial and noncommercial operations have been inventoried in portions of the basin, and technical, financial, and educational assistance has been directed to some of these operations as well.

#### \* Permitted operations

Inventory: There are 52 permitted Confined Animal Feeding Operations (CAFOs) in the Tualatin basin (map attached).

	<u>Number of Operations</u>	<u>Number of Animals</u>
Dairy	41	9381
Swine	11	5889

Inspections: The Oregon Department of Agriculture has concluded an aerial photographic survey of all 52 permitted CAFOs in the Tualatin basin. ODA staff are currently assessing the results of the survey, prioritizing operations for potential problems, and determining appropriate followup measures which will assure each operation's compliance with provisions of the individual WPCF permits. Permits require the achievement of no discharge of animal waste to waters of the state. It is anticipated that by June 1, 1993, all permitted CAFO operations will be in compliance or will be on a schedule to achieve compliance.

In addition, since June 1, 1991, seven on-the-ground inspections of permitted CAFOs in the basin have been conducted by ODA and/or the SWCDs. The status of each on-the-ground inspection follows:

Firm # 21165: NON issued, SFO negotiated  
 Firm # 76271: NON issued, SFO negotiated, compliance date 12/31/92  
 Firm # 96466: NON issued, compliance date 9/30/92  
 Firm # 55203: NON issued, SFO negotiated, compliance date 1/2/94  
 Firm # 95468: NON issued, SFO negotiated  
 Firm # 21145: NON issued, SFO negotiated  
 Firm # 21150: NON issued, SFO negotiated

Previous to 1990, animal waste systems were installed on 7 permitted CAFO operations.

Animal waste systems are currently in the planning stages on 9 permitted CAFO operations. In addition, initiation of the planning and engineering process is pending on 3 permitted CAFO operations.

Cost-sharing summary: Following is a summary of public and private cost-share monies spent and planned on animal waste systems on permitted CAFO operations:

Practice	Public and private expenditures		
	'87, '88, '89	'90, '91	Pending '92
Animal waste systems	\$ 85,000	\$488,000	\$100,000

**\* Non-permitted operations**

Inventory: Inventory of non-permitted livestock operations has focused in priority subbasins, though additional information is available for some operations scattered throughout the basin. It is estimated that inventory of these operations is 50% completed for the basin as a whole, and 95% complete for the HUA. The inventory has turned up a much greater number of livestock operations of all sizes than previously anticipated.

	Number of Operations		
	<5 Animals	6-15 Animals	>15 Animals
Dairy	2	-	10
Beef	64	66	46
Horses	98	24	18
Swine	21	4	1
Sheep	12	50	-
Poultry	-	-	1

Planned facilities and practices: Animal waste systems are currently in the planning stages on 3 non-permitted CAFO operations. In addition, initiation of the planning and engineering process is pending on 1 non-permitted operation.

Cost-sharing summary: Following is a summary of public and private cost-share monies spent on animal waste systems and management on non-permitted commercial and noncommercial livestock operations:

	Public and private expenditures		
	'87, '88, '89	'90, '91	Pending '92
Animal waste systems	-	\$ 70,000	\$ 7,000

### Container Nurseries

The "Container Nursery Irrigation Water Management Plan" for container nurseries in Oregon to eliminate irrigation water discharges is in place. The general policy of the plan is to eliminate irrigation water discharges. Container nurseries were recently approved as qualifying for federal cost-sharing for the installation of conservation and water quality practices.

Letters of Intent: There are 83 container nurseries and greenhouse operations in the Tualatin basin which have submitted "Letters of Intent" to ODA in response to the statewide Container Nursery Irrigation Water Management Plan. These 83 operations cover approximately 850 acres, ranging in size from 0.01 to 240 acres (map attached).

Discharge Status: By May 1, 1992, all but 7 of these operations have indicated that summer irrigation water discharges will be eliminated. These seven operations already have or will be submitting Plans to ODA indicating how they will eliminate discharges by June 1, 1993. No operations are expected to be discharging after June 1, 1993.

Planned facilities and practices include clean diversions, drainage collection systems, water storage facilities, irrigation tailwater recovery systems, and irrigation water management (drip irrigation and automated timers, etc).

Cost summary: Following is a summary of estimated public and private monies spent on container nursery irrigation water management plan implementation:

	Public and private expenditures		
	'87, '88, '89	'90, '91	Pending '92
Irrigation water management, recovery systems	?	\$275,000	\$625,000

### Erosion Control

Erosion control is not a new concept or practice for agriculture. Erosion control planning and implementation on a voluntary basis has been ongoing in the Tualatin basin for a long time, through the efforts of the Soil and Water Conservation Districts, SCS, ASCS, OSU Extension Service, private



initiatives, and other means. With the current interest and focus on water quality and acceleration of the implementation of agricultural water quality practices for nutrient and erosion control, significant additional resources in the form of technical, financial, and educational assistance have been directed into the Tualatin basin from federal, state, and local sources.

There are several programs available through the USDA that are being utilized in the basin to help control nonpoint source pollution from agriculture. The Food Security Act (FSA) of 1985 required conservation plans on all highly erodible land (HEL) for producers to maintain eligibility for certain commodity programs.

The Hydrologic Unit Area (HUA) program covers the 164,000 acre drainage area of the Dairy-McKay Creeks within the Tualatin basin. This is a five year water quality enhancement program which began in 1990, and 4.2 million USDA dollars have been allocated for technical, cost-share, and educational assistance. Within the HUA there are approximately 45,000 acres that erode at greater than three times the soil loss tolerance for the soils. Conservation plans are being developed and applied through the Agricultural Conservation Program, (ACP). Through ACP, producers can apply for assistance to install conservation practices. For 1991, there were \$172,000 available for cost-sharing in the HUA. Funds are expected to continue to be made available for cost-sharing throughout the life of this program.

Additional annual funds for conservation practice application have been available for the rest of the Tualatin basin through the respective county ASCS offices. Funds are expected to continue to be made available.

Significant emphasis has been placed recently on the installation of cover crops in a variety of cropping systems. Site-specific plans have been made for installation of these practices this season, and a number of sites have been planted.

**\* Upland Erosion:**

**Highly Erodible Land (HEL):** Currently there are approximately 12,000 acres of HEL cropland in the basin which fall under the FSA program. All of these acres have a conservation plan written on them and all practices will be applied by the 1/1/95 deadline for compliance with the FSA program. The following is a breakdown of conservation practices applied and planned for HEL lands through 1/1/95.

Practice	Acres Applied		
	'87, '88, '89	'90, '91	'92-'94
Chiseling and subsoiling		9	4203
Conservation cropping sequence		3668	8652
Conservation tillage		72	6007
Contour farming		195	6385
Cover and green manure crops		20	1060
Crop residue use		107	8024

The above '90, '91 practices adequately treated 4191 acres of cropland

and reduced soil erosion by 26,631 tons, an average soil loss reduction of 6 tons/acre.

The above '92, '94 practices are expected to adequately treat the remainder of HEL cropland under the FSA program and result in additional significant soil loss reductions.

**\* Streambank Erosion:**

Inventory: Existing inventory of streambank erosion sites is detailed below.

Control measures are planned or pending on 7 basin sites covering 0.6 miles of streambank. These are all new efforts as a result of the enhanced water quality implementation efforts.

It is expected that six of these projects will be initiated and completed in 1992. The remaining site is planned to be a two year project.

Planned practices include: Grading and shaping, vegetative plantings, fencing, rock rip-rap.

Cost-sharing summary: Following is a summary of public and private cost-share monies spent on streambank erosion control:

Practice	Public/private expenditures		
	'87, '88, '89	'90, '91	Pending '92
Streambank erosion control	-	\$ 58,000	\$10,000

**Information and Education Campaign:**

The information and education campaign to date has focused mainly on large commercial operations, promoting soil and water conservation and nutrient management practices in the interest of water quality. A number of papers, presentations, and tours have been undertaken in the local area, and have involved grower groups, Chambers of Commerce, and professional organizations.

A horticulture seminar was held in March, and included workshops on fertilizer usage and irrigation water management, and recommendations from a water quality perspective,

Oregon State University Extension Service is conducting a landowner survey in early April to assess the understanding of agricultural nonpoint source pollution among operators in the basin. Analysis of this information will help in targeting information and education resources to those areas of greatest need.

The four SWCDs in the basin have been successful in acquiring grant funds from the Oregon Department of Agriculture's Natural Resources Division to conduct a small, noncommercial farm project which will implement a variety of livestock waste management and other nutrient and

erosion controls on a group of small noncommercial farms. These sites will be used as demonstration sites, to promote the feasibility of water quality practice implementation on these types of operations.

The Oregon Department of Agriculture has committed to creation of a water quality handbook for the small rural landowner, offering a variety of low-tech solutions which can be implemented at relatively low cost. ODA has submitted a grant application to EPA for printing of this publication, and to present water quality workshops for leaders of youth and adult agricultural groups, to gain leader's appreciation for and understanding of water quality and the impact that small landowners, particularly owners of livestock, can have on streams in their vicinity. Following their acceptance of the need for change, it is expected that these leaders will serve as agents for disseminating information to their member organizations, catalyzing interest in water quality issues and land management changes on their own operations.

A multi-agency joint newsletter is planned for distribution to farm operators in the Washington County portion of the basin. DEQ has expressed interest in supporting this effort.

Oregon State University has proposed a project in the basin which would evaluate a variety of existing waste management practices on small noncommercial farms with livestock and develop alternative management systems, possibly including pooling agreements to create a centralized waste collection and processing facility for animal waste.

#### SWCD Advisory Committees

The Washington County SWCD has created a number of nonpoint source water quality plan implementation advisory committees to assist with development of implementation strategies for various topic areas identified in the nonpoint source plan for agriculture. Membership on each committee includes an agency staff representative with background in the area of interest, and farm operators and professionals with expertise in the respective committee's focus area. Membership on some of the committees includes staff representatives from other agencies, such as Unified Sewerage Agency, Tualatin Valley Irrigation District, and the Washington County Department of Land Use and Transportation. Committees include: CAFO, Crops, Nurseries, Roadside Erosion/Septic Systems, Riparian area/Wetlands, Irrigation Water/Recycled Wastewater/Sludge Application, Technical, and Hydrologic Unit Area. The HUA Committee is made up of members of the other committees.

Cooperative working relationships with staff of the Washington County Department of Land Use and Transportation and the Health Department have been established to assess problems related to roadside erosion control and septic system issues in the rural areas.

The crops committee is gathering together various fertilizer guides for a diversity of crops, to publicize crop-specific fertilizer requirements. The committee is encouraging:

\* Use of soil and tissue analysis in conjunction, to maximize efficiency of fertilizer inputs based on crop need, stage of growth, and to maximize economic efficiency of fertilizer usage.

\* Seeding of headlands of perennial crops such as berries and orchards where this practice is not already in place.

\* Planting of cereal crops with perennial grass seed for cover establishment in the fall.

\* Fertilizer application recordkeeping by operators.

The technical advisory committee has discussed overall monitoring objectives in the areas of compliance, problem identification and effectiveness monitoring, and has been successful in acquiring new resources from a number of areas to conduct additional monitoring and research.

The riparian/wetlands committee has discussed hydrologic and agricultural management practices affecting riparian areas, and has made recommendations for management of livestock and vegetation in riparian areas to avoid streambank and riparian area degradation.

The irrigation committee has been working on a model irrigation water management plan, for application on lands which will be receiving applications of Unified Sewerage Agency's recycled wastewater, and on critical lands under irrigation in Washington County.

## WHAT HAVE BEEN THE RESULTS SO FAR?

### Background

The agricultural nonpoint source pollution control plan which was approved in June 1991 indicated that implementation progress would be measured by improvements in instream water quality as loadings approached the TMDLs for total phosphorus in the agricultural portions of the basin. Much has been learned in the interim, through additional monitoring, interpretation of monitoring data, and additional research. The water quality monitoring data is providing insight about the nature of water quality problems in the basin, particularly in regard to impacts from overland flow, possible natural background levels, possible elevated levels of phosphorus in shallow groundwater, and the possible role of resident sediments. As is often the case, the data raises significant new questions for all participating agencies attempting to better characterize the geo- hydro- bio- chemical processes occurring in the Tualatin system.

Agricultural agencies and interests in the basin feel that instream progress as a result of nonpoint source pollution control implementation on all land use categories may take time to develop. If the Tualatin system behaves and responds similarly to other watersheds in the country in which NPS controls have been implemented, this could certainly be the case. Projects similar to the Tualatin have been carried out with well documented source reductions. In these cases, the response of the receiving water body to well documented nutrient and sediment source reductions resulting from land treatment has not been as dramatic or soon as would be expected from the source reductions.

**Monitoring:** A summary of monitoring information available to date follows. There has been a significant amount of information gathered over the past several years, and more importantly, there has been a significant effort put into analysis of the data from agricultural areas to extract information and trends to help quantify resource problems, attempt to correlate problems with land use, and use this information to aid in targeting resources to address the most critical resource problems in the interest of water quality. While there is obviously a special focus on phosphorus, other parameters are also of interest and importance for overall improvement in water quality. Data analysis has generated significant additional questions, and many of these questions are being addressed in newly initiated current research/study projects.

**Oregon Department of Forestry:** Summertime monitoring data from 1991 indicates average monthly phosphorus concentrations in Tualatin basin headwaters in a number of tributaries at levels significantly higher than estimates which were used in modelling to determine loading capacity and calculate load allocations in the TMDL process. The levels of phosphorus detected are well within the range of values which have been found in other forest studies undertaken in the United States and Canada, including watersheds in the Pacific Northwest and Oregon.

While there is some site to site variation in levels of phosphorus detected, there is general consistency in values within individual sites throughout the summertime monitoring season. Variability in phosphorus

levels from site to site may be due to underlying geological/hydrological conditions. Further work is being undertaken to answer some of the questions raised, and this research is referred to in a following section.

**OSU Study, Yamhill Basin:** An intensive study has been undertaken in a portion of the Yamhill basin to evaluate natural and human caused phosphorus levels in surface and groundwater in a selected portion of the Yamhill basin. Results of this study should be available in 1992, and are expected to provide further insight into water quality problems and causes in the Tualatin basin.

**US Geological Survey:** Limited groundwater monitoring in 1991 indicates total phosphorus concentrations at or exceeding of the target 0.07 mg/l standard for the Tualatin River in shallow groundwater in the Tualatin floodplain. This preliminary information suggests either a natural or human caused source of relatively high phosphorus concentrations in shallow groundwater. It may also suggest the presence of soils which bond phosphorus less tightly than normal. Further work is being undertaken by USGS to characterize groundwater flow and acquire more groundwater quality data in the 1992 season, in an attempt to answer some of the questions raised. This research is referred to in a following section.

**TMDL compliance season ambient monitoring:** Evaluation of a portion of the summertime monitoring information from agricultural areas indicates that overland flow and loading from nonpoint sources is not generally occurring. Tributary flows after summer storm events do not appear to be carrying increased total suspended solids or nutrient concentrations above levels detected in base flow conditions. Increases would indicate contributions from typical nonpoint source overland transport of pollutants.

Since most of the flow in the tributaries during this dry time of year is from groundwater recharge and is not from overland flow, questions arise about whether the observed concentrations are due to point sources or groundwater recharge. Further work has been, and is being undertaken to answer some of the questions raised, and this research is referred to in a following section.

Further questions remain regarding the significance and impact of wintertime erosion on sedimentation and ensuing summertime water quality problems.

**Wintertime ambient monitoring:** Additional monitoring data are being gathered in winter 1991/92 before, during, and after storm events. These data will need to be evaluated to assess the extent of nutrient contributions from overland flow after and during winter storm events.

#### Subbasin priorities

Given the 1990 and 1991 ambient monitoring data, the following preliminary priorities have been established based on phosphorus loading:

These are very rough calculations, as they take in seasonal average flows and seasonal average total phosphorus values. However, this ranking provides a gauge for setting subbasin priorities.

Subbasin	1993	1991	1991	1991	1993	1991
	Assigned loading capacity (mg/l)	1991 avg flow (cfs)	1991 avg T-PO4 (mg/l)	1991 avg daily T-PO4 load (#/day)	Allowed avg daily T-PO4 load (#/day)	avg daily T-PO4 load exceedance (#/day)
WF Dairy Creek	0.04	16.30 <sup>2</sup>	.134	11.77	3.51	8.26
EF Dairy Creek	0.04	18.97	.074	7.57	4.08	3.48
Burris Creek <sup>3</sup>	0.07	1.50	.470	3.80	.57	3.23
McKay Creek	0.045	7.40	.112	4.47	1.79	2.68
Christensen Cr <sup>4</sup>	0.07	0.50	.820	2.20	.19	2.01
Chicken Creek <sup>5</sup>	0.07	6.00	.130	4.20	2.26	1.94
McFee Creek <sup>6</sup>	0.07	3.00	.110	1.80	1.13	0.67
Saum Creek <sup>7</sup>	0.07	1.16	.142	0.89	0.44	0.45
Carpenter Cr <sup>8</sup>	0.40	?	.287	?	?	?

### Research and Monitoring

Oregon Department of Forestry: ODF will continue the ambient monitoring program in 1992, and will move some sites to address questions relating to the observed variability in phosphorus values from site to site.

US Geological Survey: USGS will be conducting further shallow groundwater monitoring in 1992 to address some of the questions raised regarding possible natural and human caused levels of phosphorus in shallow groundwater.

Soil Conservation Service/Oregon State University winter monitoring: SCS, OSU, OGI, and others are currently cooperating in a project to evaluate water quality and characterize pollution sources on a number of tributaries through a program of wintertime monitoring in 1992. The objective is to gain insight into the winter erosion/ sedimentation/ phosphorus transport regime in Dairy, McKay, and Fanno Creeks. This information will help to further quantify the role which erosion and sedimentation may be playing during the winter runoff season in agricultural areas of the basin.

- 
- <sup>2</sup> Flow and total phosphorus concentration averaged for two dates only.
- <sup>3</sup> Data for June through October only.
- <sup>4</sup> Data for June through October only.
- <sup>5</sup> Data for June through October only. Significant urban land use above sample site.
- <sup>6</sup> Data for June through October only.
- <sup>7</sup> This subbasin is in Clackamas County. Data is for two samples in summer 1990 only.
- <sup>8</sup> No flow data available.

Soil Conservation Service soils study: The Soil Conservation Service, Oregon Graduate Institute, and others are involved in a study designed to help determine the potential of area soils to contribute to the observed phosphorus levels in the basins' waters. This study is looking at eight representative soil series and the soils' abilities to act as sources or sinks for phosphorus in the streams.

Oregon Graduate Institute: OGI is studying sediment dynamics in the tributary systems and quantifying phosphorus adsorption/desorption processes.

Department of Environmental Quality: DEQ has submitted a proposal to EPA for funding one year of a long-term effectiveness monitoring program within the Dairy-McKay HUA. This proposal if funded will assist in evaluating the effectiveness of implementation measures in a selected area of this critical watershed.

Oregon State University TMDL Evaluation: A project recently initiated by Oregon State University, the Oregon Graduate Institute, and Portland State University will aid in the decision making process as the TMDLs and instream standards for phosphorus are re-evaluated before the TMDL compliance date in June 1993.

**\* CONCLUSIONS:**

- \* Background levels of phosphorus in the upper sections of a number of tributaries in the basin appear to be higher than the original levels used in modelling to set the TMDLs.
- \* If apparently high background and shallow groundwater phosphorus levels are due to natural processes, this will be difficult to change.
- \* If apparently high background and shallow groundwater phosphorus levels are due to human caused activities, the groundwater (and therefore summer surface water base flows) will require a significant amount of time to respond to land treatment.
- \* Observed elevated phosphorus concentrations in the mid and lower sections of tributaries appears to be occurring in base flow conditions, indicating either natural (soil based) or point source type loadings as opposed to traditional nonpoint, overland flow sources.
- \* Analysis of summer ambient monitoring data indicate that increased surface water flows after storm events do not appear to be carrying increased total suspended solids and nutrient concentrations above levels detected in base flow conditions. Increases would reflect contributions from typical nonpoint overland transport of pollutants in surface runoff.
- \* Resident sediments and organic materials in the stream channels may be acting as seasonal sources and sinks for nutrients and other pollutants.



WHERE DO WE NEED TO GO IN THE FUTURE?

Over the past several years of planning and implementation, important lessons have been learned which can be utilized to improve the program. Results of the land use inventory has helped to further target efforts and resources to areas of critical need. Specific areas which need to be developed and addressed are listed below:

- \* Further research, design, and demonstration of vegetative solutions to resource problems, such as bioengineered controls for streambank erosion, and riparian area improvements.
- \* Further direction of technical assistance to design of animal waste management systems, as a result of what has been learned through the inventory process and the ensuing re-prioritization of activities. Mobilization of additional resources for this purpose has been initiated.
- \* Further information is needed on the role of septic systems and their contribution to base flow pollution loading. Are there poorly drained soils in the upper watershed where there are septic systems in place? Monitoring in these portions of the watersheds would help in this determination.
- \* Continued integration of USDA programs into the water quality improvement effort. While programs traditionally have addressed erosion control directly and water quality indirectly, there is a current shift in focus directly to water quality, offering incentives for adoption of water quality practices.
- \* Utilization of the new USDA Water Quality Incentives Program, which provides additional incentives to farm operators for adoption of water quality management practices. These incentive payments are for non-structural practices which enhance water quality. Farm operators in a portion of the Tualatin basin are eligible for this program, and plans are underway to promote this program for the next enrollment period, scheduled for June 1992.
- \* Further examination and analysis of monitoring and research data to assist in further identification of base flow sources of pollution.
- \* Acquisition of a GIS system for mapping of land use, resource problems, and tracking of progress would be a very useful tool to further refine planning and implementation efforts. A formal request has been submitted by the Washington County SWCD to SCS for acquisition of a GIS system.
- \* Additional innovative solutions to site-specific problems are being explored, and this work will continue. Straw mulching and the use of a "Dammer/Diker" machine for erosion control are being evaluated for use in strawberries and other medium rotation crops. These systems are scheduled to be demonstrated in the basin in 1992.

Given indications from the summer monitoring data that there is not a clear correlation between increased flows after storms and increased suspended solids and nutrient concentrations when compared to base flow conditions, the Oregon Department of Agriculture feels that additional regulations for erosion control to achieve water quality standards is not warranted. A significant portion of the Highly Erodible Lands in the basin are adequately protected or plans are in place for adequate protection by 1/1/95. This program is tied through the commodity price support system to a mandated standard of performance for erosion control.

The Oregon Department of Agriculture, the Soil and Water Conservation Districts, and support agencies are obviously committed to erosion control, given the history of implementation of controls on agricultural lands over decades. The current focus on water quality is seen as an opportunity to accelerate implementation. The Department and support agencies are committed to an aggressive program to address critical areas that pose the highest risk of nutrient, pesticide, sediment, and bacteria pollution to the waters of the Tualatin basin. While instream results due to land treatment may be slow to develop, significant reductions at the source have been and will continue to be accomplished through aggressive implementation of existing regulatory and voluntary programs.

OREGON ADMINISTRATIVE RULES  
 CHAPTER 340, DIVISION 41 — DEPARTMENT OF ENVIRONMENTAL QUALITY

**Special Policies and Guidelines**

340-41-470 (1) In order to preserve the existing high quality water for municipal water supplies and recreation, it is the policy of the EQC to prohibit any further waste discharges to the waters of:

- (a) The Clackamas River Subbasin;
- (b) The McKenzie River Subbasin above the Hayden Bridge (river mile 15);
- (c) The North Santiam River Subbasin.

(2) The Environmental Quality Commission shall investigate, together with any other affected state agencies, the means of maintaining at least existing minimum flow during the summer low flow period.

(3) In order to improve water quality within the Tualatin River subbasin to meet the existing water quality standard for dissolved oxygen, and the 15 ug/l chlorophyll *a* action level stated in OAR 340-41-150, the following special rules for total maximum daily loads, waste load allocations, load allocations, and implementation plans are established.

(a) After completion of wastewater control facilities and implementation of management plans approved by the Commission under this rule and no later than June 30, 1993, no activities shall be allowed and no wastewater shall be discharged to the Tualatin River or its tributaries without the specific authorization of the Commission that cause the monthly median concentration of total phosphorus at the mouths of the tributaries listed below and the specified points along the mainstem of the Tualatin River, as measured during the low flow period between May 1 and October 31\*, of each year, unless otherwise specified by the Department, to exceed the following criteria:

Mainstem (RM)	ug/l	Tributaries	ug/l
Cherry Grove (67.8)	20	Scoggins Cr.	60
Dilley (58.8)	40	Gales Cr.	45
Golf Course Rd. (52.8)	45	Dairy Cr.	45
Rood Rd. (38.5)	50	McKay Cr.	45
Farmington (33.3)	70	Rock Cr.	70
Elsner (16.2)	70	Fanno Cr.	70
Stafford (5.4)	70	Chicken Cr.	70

(b) After completion of wastewater control facilities and implementation of management plans approved by the Commission under this rule and no later than June 30, 1993, no activities shall be allowed and no wastewater shall be discharged to the Tualatin River or its tributaries without the specific authorization of the Commission that cause the monthly median concentration of ammonia-nitrogen at the mouths of the tributaries listed below and the specified points along the mainstem of the Tualatin River, as measured between May 1 and November 15\*, of each year, unless otherwise specified by the Department, to exceed the following target concentrations:

Mainstem (RM)	ug/l	Tributaries	ug/l
Cherry Grove (67.8)	30	Scoggins Cr.	30
Dilley (58.8)	30	Gales Cr.	40

Golf Course Rd. (52.8)	40	Dairy Cr.	40
Rood Rd. (38.5)	50	McKay Cr.	40
Farmington (33.3)	1000	Rock Cr.	100
Elsner (16.2)	850	Fanno Cr.	100
Stafford (5.4)	850	Chicken Cr.	100

(c) The sum of tributary load allocations and waste load allocations for total phosphorus and ammonia-nitrogen can be converted to pounds per day by multiplying the instream criteria by flow in the tributary in cfs and by the conversion factor 0.00539. The sum of load allocations waste load allocations for existing or future nonpoint sources and point source discharges to the mainstem Tualatin River not allocated in a tributary load allocation or waste load allocation may be calculated as the difference between the mass (criteria multiplied by flow) leaving a segment minus the mass entering the segment (criteria multiplied by flow) from all sources plus instream assimilation.

(d) The waste load allocation (WLA) for total phosphorus and ammonia-nitrogen for Unified Sewerage Agency of Washington County is determined by subtracting the sum of the calculated load at Rood Road and Rock Creek from the calculated load at Farmington.

(e) Subject to the approval of the Environmental Quality Commission, the Director may modify existing waste discharge permits for the Unified Sewerage Agency of Washington County and allow temporary additional waste discharges to the Tualatin River provided the Director finds that facilities allowed by the modified permit are not inconsistent and will not impede compliance with the June 30, 1993 date for final compliance and the Unified Sewerage Agency is in compliance with the Commission approved program plan.

(f) Within 90 days of the adoption of these rules, the Unified Sewerage Agency of Washington County shall submit a program\*\* plan and time schedule to the Department describing how and when the Agency will modify its sewerage facilities to comply with this rule. The program plan shall include provisions and time schedule for developing and implementing a management plan under an agreement with the Lake Oswego Corporation for addressing nuisance algal growth in Lake Oswego.

(g) Within 18 months after the adoption of these rules, Washington, Clackamas, Multnomah Counties and all incorporated cities within the Tualatin River and Oswego Lake subbasins shall submit to the Department a program plan\*\* for controlling the quality of urban storm runoff within their respective jurisdictions to comply with the requirements of sections (a) and (b) of this rule.

(h) After July 1, 1989, Memorandums of Agreements between the Departments of Forestry and Agriculture and the Department of Environmental Quality shall include a time schedule for submitting a program plan\*\* for achieving the requirements of subsections (a) and (b) of this rule. The program plans shall be submitted to the Department within 18 months of the adoption of this rule.

(i) Within one hundred twenty (120) days of

submittal of the program plans\*\* and within sixty (60) days of the public hearing, the Environmental Quality Commission shall either approve or reject the plan. If the Commission rejects the plan, it shall specify a compliance schedule for resubmittal for approval and shall specify the reasons for the rejection. If the Commission determines that an agency has not made a good faith effort to provide an approvable plan within a reasonable time, the Commission may invoke appropriate enforcement action as allowed under law. The Commission shall reject the plan if it determines that the plan will not meet the requirements of this rule within a reasonable amount of time. Before approving a final program plan, the Commission shall reconsider and may revise the June 30, 1993 date stated in subsections (a), (b), and (e) of this rule. Significant components of the program plans shall be inserted into permits or memorandums of agreement as appropriate.

(j) For the purpose of assisting local governments in achieving the requirements of this rule, the Department shall:

(A) Within 90 days of the adoption of these rules, distribute initial waste load allocations and load allocations among the point source and nonpoint source management agencies in the basin. These allocations shall be considered interim and may be redistributed based upon the conclusions of the approved program plans.

(B) Within 120 days of the adoption of these rules, develop guidance to nonpoint source management agencies as to the specific content of the programs plans.

(C) Within 180 days of the adoption of these rules, propose additional rules for permits issued to local jurisdictions to address the control of storm water from new development within the Tualatin and Oswego Lake subbasins. The rules shall consider the following factors:

(i) Alternative control systems capable of complying with subsections (a) and (b) of this rule:

(ii) Maintenance and operation of the control systems.

(iii) Assurance of erosion control during as well as after construction.

(D) In cooperation with the Department of Agriculture, within 180 days of the adoption of this rule develop a control strategy for addressing the runoff from container nurseries.

(4) In order to improve water quality within the Yamhill River subbasin to meet the existing water quality standard for pH, the following special rules for total maximum daily loads, waste load allocations, load allocations and program plans are established:

(a) After completion of wastewater control facilities and program plans approved by the Commission under this rule and no later than June 30, 1994, no activities shall be allowed and no wastewater shall be discharged to the Yamhill River or its tributaries without the authorization of the Commission that cause the monthly median concentration of total phosphorus to exceed 70 ug/l as measured during the low flow period between approximately May 1 and October 31\*\*\* of each year.

(b) Within 90 days of adoption of these rules, the Cities of McMinnville and Lafayette shall submit a program plan and time schedule to the Department describing how and when they will modify their sewerage facility to comply with this rule.

(c) Final program plans shall be reviewed and approved by the Commission. The Commission may define alternative compliance dates as program plans are approved. All proposed final program plans shall be subject to public hearing prior to consideration for approval by the Commission.

(d) The Department shall within 60 days of adoption of these rules distribute initial waste load allocations and load allocations to the point and nonpoint sources in the basin. These allocations shall be considered interim and may be redistributed based upon the conclusions of the approved program plans.

\*Precise dates for complying with this rule may be conditioned on physical conditions (i.e., flow, temperature) of the receiving water and shall be specified in individual permits or memorandums of understanding issued by the Department. The Department shall consider system design flows, river travel times, and other relevant information when establishing the specific conditions to be inserted in the permits or memorandums of understanding. Conditions shall be consistent with Commission-approved program plans\*\* and the intent of this rule.

\*\*For the purpose of this section of the rules, program plan is defined as the first level plan for developing a wastewater management system and describes the present physical and institutional infrastructure and the proposed strategy for changes including alternatives. A program plan should also include intergovernmental agreements and approvals, as appropriate; time schedules for accomplishing goals, including interim objectives; and a financing plan.

\*\*\*Precise dates for complying with this rule may be conditioned on physical conditions (i.e., flow, temperature) of the receiving water and shall be specified in individual permits or memorandums of understanding issued by the Department. The Department shall consider system design flows, river travel times, and other relevant information when establishing the specific conditions to be inserted in the permits or memorandums of understanding.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 17-1988, f. & cert. ef. 7-13-88; DEQ 25-1988, f. & cert. ef. 9-16-88; DEQ 18-1989, f. & cert. ef. 7-31-89, (and corrected 8-3-89)

### Sandy Basin

#### Beneficial Water Uses to be Protected

340-41-482 Water quality in the Sandy River Basin (see Figures 1 and 8) shall be managed to protect the recognized beneficial uses as indicated in Table 7.

Stat. Auth.: ORS Ch. 468

ENVIRONMENTAL  
QUALITY  
COMMISSION

**REQUEST FOR EQC ACTION**

Meeting Date: June 14, 1991  
Agenda Item: I  
Division: Water Quality  
Section: Surface Water

**SUBJECT:**

Tualatin River Basin Nonpoint Source Control Watershed Management Plans for Agriculture and Forestry.

**PURPOSE:**

To approve or reject each plan and, if necessary, specify a process for revision and resubmission of a rejected plan.

**ACTION REQUESTED:**

- Work Session Discussion
  - General Program Background
  - Potential Strategy, Policy, or Rules
  - Agenda Item \_\_\_ for Current Meeting
  - Other: (specify)
  
- Authorize Rulemaking Hearing
- Adopt Rules
  - Proposed Rules Attachment \_\_\_
  - Rulemaking Statements Attachment \_\_\_
  - Fiscal and Economic Impact Statement Attachment \_\_\_
  - Public Notice Attachment \_\_\_
  
- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
  - Proposed Order Attachment \_\_\_



811 SW Sixth Avenue  
Portland, OR 97204-1390  
(503) 229-5696



Meeting Date: June 14, 1991  
 Agenda Item: I  
 Page 2

<input checked="" type="checkbox"/> <u>X</u> Approve Department Recommendation	
___ Variance Request	Attachment ___
___ Exception to Rule	Attachment ___
___ Informational Report	Attachment ___
<u>X</u> Other: specify	Attachments <u>A,A-1</u> <u>B,B-1</u>

DESCRIPTION OF REQUESTED ACTION:

The Environmental Quality Commission (Commission) is requested to either approve, reject or approve for a limited duration program plans as recommended by staff and reviewed by staff in the attachments and to adopt compliance schedules for controlling nonpoint source pollution from forested and agricultural lands in the Tualatin River Basin. Program plans are required of the Designated Management Agencies (DMA) by Commission Rule (OAR 340-41-470(3)(i)). These nonpoint source pollution control plans must show how each agency will meet load allocations for the Tualatin River Basin Total Maximum Daily Load (TMDL) Program. On August 10, 1990 the Commission approved all the urban DMA's (those cities and counties within the Tualatin River Basin) nonpoint source pollution control plans and deferred action on the forestry and agriculture plans.

Department staff recommend approval of the watershed management plan submitted by the Oregon Department of Forestry (ODF). The Department recommends approval until June, 1992 of the watershed management plan submitted by the Oregon Department of Agriculture (ODA). This will allow ODA to implement a voluntary compliance program, conduct instream water quality monitoring and possibly other monitoring to determine the effectiveness of voluntary efforts and report results to the Department by February 1, 1992. The Department would then determine whether the voluntary program was effective in meeting instream load allocations and report to the Commission in June, 1992. If it is determined by the Department that the voluntary compliance program is ineffective, the Commission would need to re-approve or modify the plan with the possible designation of a new DMA(s). ODA would also be directed to work with the Counties within the basin to develop mandatory compliance and enforcement ordinances which would be implemented by the Counties by January, 1993, if voluntary compliance did not work. ODA would continue to administer the Confined Animal Feeding Operation (CAFO) and Container Nursery Programs. Provisions for riparian vegetative buffers and filter strip requirements where streambank erosion occurs would be included in the plan.

Meeting Date: June 14, 1991  
 Agenda Item: I  
 Page 3

AUTHORITY/NEED FOR ACTION:

\_\_\_ Required by Statute: \_\_\_\_\_ Attachment \_\_\_  
     Enactment Date: \_\_\_\_\_  
 \_\_\_ Statutory Authority: \_\_\_\_\_ Attachment \_\_\_  
X Pursuant to Rule: OAR 340-41-470(3)(g,h,i) Attachment \_\_\_  
 \_\_\_ Pursuant to Federal Law/Rule: \_\_\_\_\_ Attachment \_\_\_  
 \_\_\_ Other: \_\_\_\_\_ Attachment \_\_\_  
 \_\_\_ Time Constraints: (explain)

DEVELOPMENTAL BACKGROUND:

\_\_\_ Advisory Committee Report/Recommendation Attachment \_\_\_  
 \_\_\_ Hearing Officer's Report/Recommendations Attachment \_\_\_  
 \_\_\_ Response to Testimony/Comments Attachment \_\_\_  
 \_\_\_ Prior EQC Agenda Items: (list) Attachment \_\_\_  
 \_\_\_ Other Related Reports/Rules/Statutes: Attachment \_\_\_

The watershed management plans subject to review are required by OAR 340-41-470(3)(g,h,i).

X Supplemental Background Information Attachment A-2,B-2

In accordance with the rule cited above, nonpoint source watershed management plans for the Tualatin River Basin were submitted to the Department in March, 1990. The Department originally recommended conditional approval of the forestry and agriculture plans, but on June 29, 1990, the Commission instead extended the time period for action on the plans and directed staff to work with ODA and ODF to reduce the number of conditions and other outstanding issues. On August 10, 1990, the Commission accepted the Department's recommendation to again defer action on the agriculture and forestry plans until they could be modified to better address a number of issues. Following re-submission of the plans in November, 1990, the Department noted significant improvements but also noted that the plans still did not adequately address several key issues. After further revisions, the plans were again submitted for the Department's review in March, 1991.

Meeting Date: June 14, 1991  
Agenda Item: I  
Page 4

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

ODA has expressed uncertainty as to (a) how an adequate authority might be developed for a mandatory phase of plan implementation and enforcement (b) obtaining long-term stable program funding, and (c) which agencies should be responsible for maintenance and exercise of these program elements.

All Counties (Washington, Clackamas, and Multnomah County) of the Tualatin River Basin have expressed preliminary willingness to discuss issues relating to implementation, enforcement authority and permanent funding programs for the agriculture watershed management plan, but discussions on these issues between ODA and the Counties have not formally begun.

The urban DMAs have expressed repeatedly to the Department their concern that ODA and ODF are being allowed a lesser standard of plan development and approval. They state that neither ODA or ODF have a Commission approved plan while the urban plans were approved almost one year ago. They also note that neither the agriculture or forestry DMA, particularly ODA, has implemented very many controls of phosphorus pollution within the Tualatin River Basin. There is also a concern that both plans will not be adequate to control nonpoint source pollution to meet the load allocations by the June 30, 1993 compliance date.

PROGRAM CONSIDERATIONS:

Approval of the ODA plan only until June, 1992, if voluntary compliance is ineffective, will involve the Department and Commission in a plan implementation and progress review process.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

The Department considered the following alternatives for the Forestry and Agriculture Tualatin River Basin Nonpoint Source Watershed Management Plans:

Forestry (ODF) Plan.

1. Approval: The ODF plan has adequately identified a process to monitor the water quality in the forested portions of the Tualatin River Basin to identify any increases in total phosphorus in the river and forested tributaries. If the



Meeting Date: June 14, 1991

Agenda Item: I

Page 5

results of the Nutrient Control Strategy Study indicate a need and/or if an increase in instream phosphorus levels occurs, ODF will proceed with an effectiveness monitoring program. This additional monitoring effort will determine the effectiveness of the Forest Practices Act (FPA) in controlling the movement of phosphorus into waters of the basin. The ODF plan identifies a process for determining whether forestry practices cause increases in instream phosphorus levels. If monitoring data indicate that an increase above the load allocations is occurring, ODF will then conduct FPA Best Management Practices (BMPs) effectiveness monitoring to determine if additional FPA BMPs are required to control phosphorus. Interim FPA program changes and, if needed, permanent changes will be proposed to the Board of Forestry for adoption and implementation. The ODF Plan will meet the TMDL compliance date as stipulated in the ODF compliance schedule (Attachment A-1).

2. **Rejection:** The ODF plan outlines a step-by-step process to further study and monitor the movement of phosphorus into the waters of the basin. However, the plan does not identify any additional FPA Best Management Practices (BMPs) that are needed now or in the future with the projected large increase in harvesting within the basin. The plan does outline a process to eventually, if needed, put into place interim FPA program changes and, if needed, permanent changes which will be proposed to the Board of Forestry for adoption and implementation. The plan outlines a process to identify the additional BMPs that may be required to meet the load allocations. This process may result in not meeting the June 30, 1993 compliance date.
3. **Approval For Limited Duration:** Approval of the ODF plan for seven to eight months. ODF would be directed to complete the Nutrient Control Strategy Study, the Compliance Monitoring (with additional forestry instream sampling sites) and the Effectiveness Monitoring by December, 1991 and report to the Commission the findings. The Department and Commission would then evaluate the study and monitoring results to determine whether additional FPA BMPs are needed now and in the future given the projected increased harvest levels. The ODF plan would need to be re-approved in June, 1992 by the Commission with appropriate conditions. If the Commission approves the plan, as currently written, for a limited duration, the TMDL compliance date may not be met, depending on the compliance schedule dates approved by the Commission.

Meeting Date: June 14, 1991  
Agenda Item: I  
Page 6

### Agriculture (ODA) Plan.

1. **Approval:** The Tualatin River Basin Agriculture (ODA) Plan has sufficiently met many, but not all, of the TMDL program conditions. Therefore, the plan could only be conditionally approved. ODA would be directed to develop permanent funding and both a mandatory compliance and enforcement program for erosion and nutrient control in order to fully implement the agriculture plan. The ODA plan would also need to be revised to include an accelerated enforcement program, administered by ODA, of CAFOs from the existing complaint driven system to an aggressive inspection and enforcement regime. Stipulations that application of riparian vegetative buffers and filter strips be required where streambank erosion is a recognized problem would also need to be included in the ODA plan in order to meet conditions for approval. Approval of the ODA plan, as currently written, would in effect allow an extension of the TMDL compliance date.
2. **Rejection:** The current ODA plan fails to meet some of the most critical TMDL requirements that would ensure that load allocations and the TMDL compliance date is met. The plan fails to identify a mandatory compliance and enforcement program for erosion and nutrient control in the event voluntary actions do not meet the load allocations. Although, the plan identifies these as necessary elements, no specific program is proposed which identifies enforcement authorities. Similarly, the ODA plan does not include a permanent funding source to provide the necessary funds, staff and other resources to implement the plan. With rejection of the plan, the Commission could transfer the agriculture DMA from ODA to the three counties within the Tualatin River Basin. A time schedule for submittal of a plan that addresses all deficiencies would be established. The ODA would be directed to aid the counties in the development of the plan with all authorities for mandatory compliance, enforcement and permanent funding source development placed on the counties. The counties currently have the authority to develop ordinances requiring mandatory compliance and enforcement and to require specific land management practices or farm plans. The plan would also need to be revised to require the application of riparian vegetative buffers and filter strips where streambank erosion is a recognized problem. An accelerated CAFO compliance program, administered by ODA, would also be included in the plan. The counties could also develop a permanent funding source through the formation of a rural Surface Water

Meeting Date: June 14, 1991  
Agenda Item: I  
Page 7

Management District, similar to the urban districts. The counties would need some time to develop plans and ordinances which would most likely result in not meeting the TMDL compliance date. The Commission would have to approve the Counties/ODA developed revised plan at a later specified time.

3. **Approval For Limited Duration:** Approve the ODA plan for one year until June, 1992. ODA would implement a voluntary compliance program for erosion and nutrient control and would conduct instream water quality monitoring and possibly other monitoring to determine the effectiveness of voluntary efforts. A report of the monitoring results would be submitted by ODA to the Department on February 1, 1992. The Department would then determine whether the voluntary program was effective in meeting the load allocations and report to the Commission in June, 1992. If it is determined by the Department that the voluntary compliance program is ineffective, the Commission would need to re-approve or modify the plan with the possible designation of a new DMA(s). ODA would also be directed to work with Washington, Clackamas and Multnomah County to develop mandatory compliance and enforcement ordinances which would be implemented by the counties by January, 1993, if voluntary compliance did not work. The ODA plan would have to be revised to include an accelerated enforcement program of the CAFO program, administered by ODA. The ODA plan would also include a stipulation that application of riparian vegetative buffers and filter strips be elevated from a recommended practice to a required practice where streambank erosion is a recognized problem. A permanent funding source(s) program would be developed by the DMA and permanent funding and staffing needs obtained by the counties by November, 1992. The TMDL compliance date would be met with a limited duration approval of the plan and the adoption of the Tualatin Basin Agriculture Watershed Management Plan compliance schedule for completion and implementation of the plan (Attachment B-1).

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

While a few issues (as noted below and discussed in greater detail in Attachments A and B) have proven particularly hard to resolve to the Department's complete satisfaction, the Department now feels it is time for approval of the ODF and for a limited duration approval of the ODA plans for the following reasons:

Meeting Date: June 14, 1991

Agenda Item: I

Page 8

- a. All key issues have either already been or will be addressed to ensure compliance with the load allocations and the compliance date;
- b. Each plan identifies the necessary control measures that are adequate to control the relative levels of contributed phosphorus pollution;
- c. It is time to move forward from plan development to implementation;
- d. ODF has established a logical step-by-step process for further identifying the instream total phosphorus levels, the possible sources and the required, if necessary, additional FPA BMPs to control nonpoint source pollution; and
- e. ODA has identified all the sources, the necessary control measures and has outlined possible mandatory compliance, enforcement mechanisms and permanent funding sources but needs additional time to implement a voluntary compliance program and to aid the counties to develop and implement mandatory compliance and enforcement ordinances and obtain permanent funding source(s), if voluntary compliance is ineffective.

Therefore, the Department recommends that the Commission:

1. Forestry (ODF) Plan.

Approve the ODF watershed management plan for the forest land uses in the basin and adopt the ODF compliance schedule for the implementation of the plan -- Attachment A-1.

All of the 13 conditions for approval listed in the Department's August, 1990 Staff Report have now been addressed. Staff's concerns with the November, 1990 ODF draft plan were that it lacked (a) clearly defined management objectives, tasks and target dates, (b) specific information on staff and funding needs and other necessary resources required to implement the plan, and (c) the development of an effectiveness monitoring program. ODF, after extensive discussions with Department staff and members of the Technical Specialists Panel, has adequately addressed these issues in the current version of the management plan.

Meeting Date: June 14, 1991  
Agenda Item: I  
Page 9

2. Agriculture (ODA) Plan.

Approve, for a period of one year, the ODA watershed management plan for the agricultural land uses in the basin with recommended staff revisions and adopt the ODA compliance schedule for the implementation of the plan -- Attachment B-1. Direct the following be done:

- a. ODA to administer an accelerated enforcement program of all CAFOs located within the basin with each inspected for compliance by June, 1992 and all in compliance by June, 1993;
- b. ODA to administer and implement the Container Nursery Irrigation Water Management Plan Strategy by the dates outlined in the plan which is located in Appendix B of the ODA Plan;
- c. ODA to conduct instream water quality monitoring and possibly other monitoring to determine effectiveness of the voluntary compliance program and report to the Department by February 1, 1992;
- d. the Department to determine the effectiveness of the voluntary compliance program and report to the Commission if ineffective;
- e. the Commission would re-approve or modify the plan by June, 1992 with possible designation of a new DMA(s) if voluntary compliance program is determined to be ineffective;
- f. the Basin Counties of Washington, Clackamas and Multnomah would begin development by March 1, 1992 and implement by January, 1993 mandatory compliance and enforcement ordinances, if voluntary compliance is ineffective; and
- g. the DMA would begin development of a stable funding source(s) by June 1, 1992 and the Basin Counties would obtain permanent funding sources and staffing needs by November, 1992.

Of the 25 conditions for approval listed in the Department's August, 1990 Staff Report, all but three have now been fully developed. Still not resolved to the Department's complete

Meeting Date: June 14, 1991  
Agenda Item: I  
Page 10

satisfaction are issues relating to enforcement (condition 7), funding (condition 16), and vegetative buffers (condition 22). Of these, enforcement authority and stable funding are the most important and are addressed by stipulations "c" through "g" above.

Approval for one year would allow implementation of most elements of the ODA plan to move ahead in the short term while, at the same time, allowing ODA and the Basin Counties to continue developing several elements which will be more important in the long term.

Based on its evaluation of current watershed enhancement practice, the Department believes that riparian vegetative buffers are a crucial component in the system of practices which must be employed to control the movement of soil and nutrients into Tualatin River Basin streams. Because the re-establishment of riparian vegetative buffers may restrict the type of agricultural crops grown or types of activities, some of those involved in local implementation of the ODA plan have expressed a preference for applying other practices first to see if they are adequate to achieve water quality goals. The Department would recommend that vegetative buffers be required in the plan where streambank erosion is present.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

As noted above, review of the watershed management plans is mandated by Commission rule. Also, action on these plans and the resulting continued progress on pollution control efforts in the Tualatin River Basin are consistent with elements of the State/EPA Agreement for fiscal year 1991.

ISSUES FOR COMMISSION TO RESOLVE:

1. Whether to accept, reject, or modify the Department's recommendations for action on the watershed management plans.
2. Whether accepting the ODA plan for a limited duration is an appropriate action for the Commission to take.

INTENDED FOLLOW-UP ACTIONS:

1. The Department will communicate the Commission's actions to ODA and ODF.

Meeting Date: June 14, 1991  
Agenda Item: I  
Page 11

2. Department staff will participate as necessary in implementation of the plans and in carrying out any conditions or stipulations placed on them by the Commission.
3. Department staff will review ODA's voluntary compliance effectiveness monitoring progress report and prepare a Staff Report to the Commission for the June, 1992 Commission Public Meeting, if voluntary compliance is determined by the Department to be ineffective in meeting instream load allocations.

Approved:

Section: Andrew T. Wheeler  
Division: Judith Taylor  
Director: \_\_\_\_\_

Report Prepared By: Don Yon, Roger Wood,  
Mitch Wolgamott, and  
Dennis Ades

Phone: 229-5371 (Yon)

Date Prepared: May 10, 1991

DY:crw  
MW\WC8\WC8477  
May 10, 1991

Attachment B

## OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

## STAFF REVIEW

TUALATIN RIVER BASIN  
WATERSHED MANAGEMENT PLAN

Designated Management Agency: OREGON DEPARTMENT OF AGRICULTURE

On August 10, 1990 the Environmental Quality Commission (EQC) reviewed the Tualatin River Watershed Management Plans for control of nonpoint source (NPS) pollution. These planning documents are required by OAR 340-41-470(3) which set total daily maximum loads (TMDLs) for the Tualatin. The plans are intended to demonstrate how the agencies involved will meet the load allocations assigned to NPS categories. Among the documents reviewed was the plan for control of NPS pollution resulting from agricultural and rural residential lands in the Tualatin River Basin. This plan was prepared and submitted by the Oregon Department of Agriculture (ODA) and the Washington County Soil and Water Conservation District. After considering the staff report which reviewed the plan, the EQC accepted the Department's recommendation to defer action. This recommendation was based on a request from ODA that they be allowed to resubmit the plan on November 1, 1990. ODA recognized that substantial revisions to the plan were necessary and expressed a preference that the Department and the EQC wait to evaluate the revised plan rather than take action on the available document. The Department recommendation for deferral included 25 conditions for approval.

The revised plan, titled Tualatin River Watershed Management Plan, A Plan for Controlling Rural Nonpoint Source Pollution, was received by the Department on November 13, 1990. It was evident that a great deal of effort had gone into the revised document. However, a detailed DEQ staff review completed on December 10, 1990 determined there were still deficiencies in critical areas which had to be addressed before the Department could recommend approval of the plan by the EQC. These deficiencies were primarily in two areas:

1. Objectives, tasks, and target dates. The plan lacked clear, measurable objectives and action items that would be implemented by specified target dates. The intent of this requirement is to provide a clear map of where the plan is headed and what "mileposts" will be passed along the way to



achieving the goal of "restoration of the waters of the basin to a level of quality that will protect and preserve their beneficial uses." Without these "mileposts" it will be impossible to track progress during implementation of the plan. Without tracking progress it will not be possible to make mid-course corrections in the event that implementation of specific tasks does not have the desired result.

2. Resources. Although the revised plan included projected costs and a good discussion of potential funding sources/options, it did not identify which of these options would be pursued and in what time frame. Again, the information required here is necessary to track progress.

An additional concern was that the plan relied entirely on voluntary compliance. It did briefly discuss some potential alternatives but did not explore means of enforcement and necessary authority. It did not state whether any of the alternatives would be pursued or supported if enforcement became necessary.

The Department staff review was provided to ODA in mid-December along with a request that ODA make further revisions to the plan by March 1, 1991. This request was complied with and Department staff again reviewed the plan. Improvements in the plan were again noted. However, there were still concerns in the areas of resources and enforcement. Representatives of ODA and DEQ met on April 16, 1991 to discuss the remaining concerns. Following that meeting ODA made final revisions to the plan and submitted the current draft which was received by the Water Quality Division on May 2, 1991.

The detailed Department Staff Review which follows is organized according to the 25 conditions that were originally described in the August 10, 1990 Staff Report. The condition is first stated exactly as it was worded in the Staff Report. The current plan revision is then reviewed in the context of the condition.

Condition 1. The Oregon Department of Agriculture, the designated management agency for the agricultural watershed management plan for the Tualatin Basin, shall assume full responsibility for modifying the plan according to the following instructions:

Review: Condition was met in the November 1990 revision.

Condition 2. Describe problems in terms of the agricultural land use practices which cause them (for example: streambank erosion resulting from riparian zone vegetation removal). These descriptions will eventually have to include detail on both location and severity before management measures can be prescribed, funded, and applied.

Review: Condition was met in the November 1990 revision.

The revised plan includes a thorough, well written, discussion of potential NPS water pollution problems associated with agricultural land use practices (Section I, Chapter III). Ultimately, additional details on location and severity of specific problems will be necessary. However, that detailed information is not necessary at this level of planning and may not be available at this time. A schedule identifying when more detailed information will be developed would be useful.

Condition 3. Collect all program elements together in one complete list. The seven elements listed in the "SWCD Strategy..." section come close to being such a list, but do not include information and education, review and adjustment, fund raising, interagency agreements and relationships, and other program elements which are developed elsewhere in the plan. Where applicable, explain which of the program elements address which of the identified problems.

Review: Condition was met in the November 1990 revision.

Condition 4. Specify the action items, work tasks, and other true objectives of the plan. The absence of such objectives, or their dispersal in a way that makes them hard to identify, is the principal weakness of the plan and manifests itself throughout. For example: The options identified in the "Information and Education" section should be expanded to indicate tasks, time lines, products, estimated costs, and responsible parties. If the implementation details of a task or objective are uncertain at this time, explain why and describe a process and a time line for development of further detail.

Review: This condition is met in the current draft.

Clear objectives are provided in Section I., Chapter IV. Control Strategies. A good and detailed list of tasks related to each objective, including target dates, is provided in Section II., Chapter V. Project Schedule.

Condition 5. Group objectives according to the control option or program element they serve. For example: The seven items listed in the "SWCD Strategy.." section are sub-goals or major program elements of the plan, and each could serve as a heading under which a number of specific tasks or objectives may be grouped.

Review: This condition is met in the current draft in the sections mentioned under condition 4 above.

Condition 6. Describe how the variety of available BMPs, management measures, and tasks will be selected and applied to address particular site-specific problems. If land owners and managers will make these selections, explain what considerations will guide them. Also explain the considerations used by cost-share funding sources in setting priorities for allocation of available funds in the basin.

Review: Condition was met in the November 1990 revision.

The section on best management practices and best management systems combined with Appendix C and the discussion of control options provide adequate information to meet this requirement.

Condition 7. Discuss optional courses of action in the event that voluntary participation is inadequate and enforcement is necessary. Identify the means of enforcement of the required BMPs, the responsible entity(s), the necessary authority, and the staffing and funding sources.

Review: This condition is minimally addressed.

It was stated in the review of the November 1990 draft that this condition was only minimally addressed. The current draft contains a much expanded and improved discussion of enforcement beginning on page 52. However, the intent of the condition, which is to identify a recommended mechanism of ensuring that agricultural load allocations are met even if voluntary participation proves inadequate, is still only minimally addressed.

The current draft does clearly state that if voluntary compliance fails then "more aggressive means of ensuring compliance ... will be employed." It does not clearly explain what those means will be. The plan does say that compliance status will be assessed by the end of

the summer of 1992. If load allocations for agriculture are not being met at that time then enforcement of regulations related to confined animal feeding operations (CAFO) will be accelerated by shifting from the existing complaint driven system to an aggressive inspection and enforcement regime. Likewise, enforcement of the Container Nursery Irrigation Water Management Plan will be accelerated. This should ensure that these two categories of agricultural operations are in compliance by the June 1993 TMDL compliance date. Other categories of agricultural operations are not addressed. Other categories in the Tualatin Basin include: Field crops & vegetables, fruit trees & nuts, small fruits & berries, vineyards Christmas trees, grass & legume seed, hay/silage.

Simultaneously with the increased enforcement of CAFO and container nurseries regulations, ODA will "explore and examine the range of possibilities for various enforcement mechanisms." Recommendations for preferred enforcement mechanisms will be developed before the deadlines for submitting legislation to the 1993 Legislative session. The plan does not identify a recommended mechanism at this time. Because the plan implies that legislation would be necessary before enforcement for other categories of operations would occur (rather than relying on existing authorities in the counties) it appears that compliance of agriculture cannot be assured by the June 1993 TMDL compliance date. The plan does not provide for contingencies in the event that legislation is not passed. Therefore, compliance is not even assured at some point after June of 1993.

Condition 8: Explain how the "first approximation" of conservation needs (page 32) was arrived at; and why those particular BMPs were selected to use in the needs estimate.

Review: Condition was met in the November 1990 revision.

Condition 9: Describe more fully the BMP descriptions and other guidance documents and directives available in the SCS Field Office Technical Guide. Include in the plan a few excerpts or examples from the SCS Guide to illustrate the information available on a particular BMP or management system approach.

Review: Condition was met in the November 1990 revision.

Although the plan does not include excerpts from the SCS Guide, the more complete discussions under the Control Strategies section of the current revision adequately meet the intent of this condition.

Condition 10: In the plan's list of BMPs, identify each one also by the SCS code or designations, if applicable.

Review: Condition was met in the November 1990 revision.

Condition 11: Identify the agency (or agencies) responsible for implementation of the program, and describe specific roles and responsibilities.

Review: Condition was met in the November 1990 revision.

Condition 12: Describe the "master plan" and "annual action plan" mentioned in the plan in terms of: (a) purpose and use, (b) content, and (c) process for development and review.

Review: Condition was met in the November 1990 revision.

Condition 13: Using a more fully developed set of program objectives and tasks, expand the implementation schedule to show interim targets or "mileposts."

Review: This condition is partially met in the current draft. The plan implementation schedule should identify when staff will be hired, and when a permanent funding source will be obtained. The schedule should also outline the process and dates when voluntary compliance will move to mandatory, if needed. ODA should identify when all needed authorities will be obtained. If ODA is unsuccessful in obtaining needed authorities, the schedule should identify when ODA will transfer the implementation and enforcement of the plan to the counties within the basin or others who have the authority.

Condition 14: Describe public involvement in plan review and adjustment.

Review: This condition is minimally, but adequately, addressed.

A schedule of when the "periodic reviews of the plan and results of actions taken..." will occur would be helpful. There should be some form of report which documents the outcome of the reviews.

Condition 15: Describe the program objectives or other assumptions underlying the detailed program administration budget. It is understood that the three funding scenario's identified in the plan imply different levels of effort and achievement. This should be described in terms of the specific objectives and tasks which can be accomplished at each funding level.

Review: Condition was met in the November 1990 revision.

Condition 16: Expand the discussion of potential funding sources to address: (a) the particular characteristics, program preferences, or funding criteria of each, (b) amounts of funds potentially available, (c) conditions typically placed on the funds, and (d) tasks for further investigation or applying to these sources of funds.

Review: This condition is minimally addressed in the current draft.

The plan fails to identify a stable funding source to supply resources to operate a base level program. It does, however, acknowledge the need for stable funding to provide staff to ODA and Washington County SWCD and support for implementation in the other Tualatin River Basin SWCDs to carry out the plan. It commits ODA and the cooperating agencies to work towards developing a stable funding source although it does not identify specific tasks related to this function in the project schedule. In the short term, ODA will support legislation in the current session that could help provide necessary resources. If efforts to pass legislation fail then ODA, and the cooperating agencies, will continue to seek stable funding during 1991/92. The plan identifies sources that will be explored including: Washington and other counties transfer of funds for rural implementation, formation of a water quality management district in all counties with the ability to collect fees. If by October of 1992 stable funding has not been secured ODA will begin coordinating efforts to introduce necessary legislation in the 1993 legislative session. The plan also provides an extensive list of cost-share, grant and loan programs available to the agricultural community.

Condition 17: If adequate funding sources are not available for the types of funding assistance programs outlined, explain what steps will be taken to require individual agricultural operators to implement the required BMPs to ensure compliance with TMDL goals.

Review: As with condition 16 above, this condition is minimally addressed.

Condition 18: Describe a process for regular periodic reporting of program implementation results.

Review: Condition was met in the November 1990 revision.

Condition 19: Discuss interagency agreements necessary for program implementation. Reiterate in one location the opportunities for interagency cooperation mentioned throughout the plan.

Review: Condition was met in the November 1990 revision.

Condition 20: Complete the container nursery water quality protection program now under development, and incorporate into the plan.

Review: Condition was met in the November 1990 revision.

Condition 21: A monthly progress report to DEQ (utilizing a one- or two-page form) and a monthly progress meeting with DEQ shall be included in the plan.

Review: Condition was met in the November 1990 revision.

Condition 22: Include provisions for the protection of all streams, wetlands, and ponds with adequate (preferably 100 feet) undisturbed buffers, as measured from the normal high water flow, on all sides.

Review: This condition is minimally addressed in the current draft.

While the current draft does not have an out right requirement for protection of waters with buffer strips, it does include a good discussion of riparian area management including recommended practices. Protection of all riparian areas is recommended (but not required) along with the use of filter strips. Soil Conservation Service guidance on design is referenced. Where streambank erosion is a recognized problem it is stated that re-establishment of streambank vegetation and use of filter strips is strongly recommended and may become a requirement if voluntary implementation of the plan does not result in compliance with load allocations.

Condition 23: All of the above must be included in a Final Plan and provided to DEQ by November 1, 1990.

Review: This condition was not met by November 1, 1990, but is met in the current version of the plan.

Condition 24: Within 30 days after submission of the Final Plan, DEQ will review the Plan and either certify its compliance with the rules or prepare other comments as necessary. Failure of the Plan to meet these conditions will result in action to enforce the provisions of OAR 340-41-470 and/or the interagency agreements resulting therefrom.

Review: This condition was met.

Condition 25: Identify the appropriate responsible agency to join with DEQ in a process to refine and establish a complete TMDL compliance monitoring program for applicable portions of the Tualatin Basin (process to commence within 120 days).

Review: The condition was met.



TUALATIN RIVER BASIN  
 OREGON DEPARTMENT OF AGRICULTURE (ODA) WATERSHED MANAGEMENT PLAN  
 COMPLETION AND IMPLEMENTATION SCHEDULE

TASKS	DATES						
	05/91 - 08/91	09/91 - 12/91	01/92 - 04/92	05/92 - 08/92	09/92 - 12/92	01/93 - 04/93	05/93 - 06/93
A. Confined Animal Feeding Operation (CAFO) Program Administered by ODA: 1. All CAFOs Inspections Completed. 2. CAFO Compliance.3.				06/92			06/93
B. Container Nursery Program Administered by ODA: 1. Letter of Intent Filed by Operators to ODA. 2. Facilities with No Discharges, Submit Statement to ODA. 3. Facilities with Discharges after 05/1/92, Submit Water Management Plan to ODA. 4. ODA Approve Plans. 5. Facilities with Discharges After 6/1/93, Obtain WPCF Permit from DEQ.	07/15/91	07/15/91	02/1/92	05/1/92			By 06/1/93
C. Tualatin Agriculture Plan -- Other Nutrient & Erosion Controls: 1. ODA Conducts Instream Monitoring to Determine Vol. Compliance Effectiveness & Reports to DEQ. 2. DEQ Evaluation of Voluntary Compliance Effectiveness. 3. Basin Counties' Mandatory Compliance & Enforcement Ordinances -- Begin Development. 4. EQC Plan Re-Approval or Modification if Vol. Compliance Determined Non-Effective & Assign New DMA(s), if Needed. 5. 319 Funding Transferred to New DMA(s), if Necessary. 6. Permanent Funding Source(s) Developed by DMA -- Begin Development. 7. Subbasin Plans & Special Studies Completed by DMA. 8. Permanent Funding Source(s) and Staffing Needs Obtained by Basin Counties.			02/1/92 03/1/92 03/1/92	06/92 06/1/92 By 06/1/92		By 10/92 By 11/92	

TUALATIN RIVER BASIN  
 OREGON DEPARTMENT OF AGRICULTURE (ODA) WATERSHED MANAGEMENT PLAN  
 COMPLETION AND IMPLEMENTATION SCHEDULE  
 (Continued)

TASKS	DATES						
	05/91 - 08/91	09/91 - 12/91	01/92 - 04/92	05/92 - 08/92	09/92 - 12/92	01/93 - 04/93	05/93 - 06/93
9. Mandatory Compliance & Enforcement Ordinances Approved & Implemented by Basin Counties.						By 01/93	
10. Other Tasks, As Identified/Agreed to in Monthly Meetings by DMA/Counties.	05/91						
D. Monitoring/Progress Reports by ODA/Basin Counties:							
1. DEQ/ODA/Counties Evaluates/Refines Water Quality Monitoring Program.	05/91		03/92			03/93	06/93
2. Instream Water Quality Monitoring Reports by Agreed-Upon Method.	07/91	11/91		08/92	12/92		06/93
3. TMDL Compliance Monitoring Program.	05/91 —————>						
4. DEQ/ODA/Counties Evaluates and, If Needed, DEQ Refines Load Allocation.	09/92						
5. Monthly Progress Report Forms to DEQ.	05/91 —————>						
6. Monthly Progress Meetings with DEQ.	05/91 —————>						
E. TMDL Compliance Date.							06/30/93

EQC Work Session Item

Meeting Date: July 23, 1992  
Agenda Item: F  
Division: Water Quality Division  
Section: Standards and Assessments

Subject:

Every two years, the Water Quality Program produces a report which describes water quality conditions in the state and discusses the Program's activities and accomplishments for the previous two years. The Water Quality Status Assessment Report is a requirement of Section 305(b) of the federal Clean Water Act and is typically referred to as the 305(b) Report.

Each state is required to submit a Water Quality Status Assessment Report to the U.S. Environmental Protection Agency (EPA). EPA summarizes the water quality information presented by the states and reports to Congress on nationwide progress towards the goals of the Clean Water Act.

During the last several two-year reporting cycles, DEQ has prepared the Report with the intent that it also be used as a report to the public outlining the various programs, responsibilities, and concerns of the agency with respect to water quality. It is, therefore, longer and more detailed than required, but past reports have been highly regarded by EPA and have been well-received by the public. The Report has also proven to be a valuable resource for DEQ staff.

The Report has gained considerable attention in recent years, largely with respect to the list of water quality limited waterbodies contained in Appendix A and the designation of waterbodies requiring Total Maximum Daily Loads (TMDLs). The current Report also presents a list of waterbodies nominated for designation as Outstanding Resource Waters, as required by the Environmental Quality Commission (EQC).



811 SW Sixth Avenue  
Portland, OR 97204-1390  
(503) 229-5696



Meeting Date: July 23, 1992  
Agenda Item: F  
Page 2

Purpose:

The purpose of this work session is to inform the EQC about the contents of the 1992 305(b) Report and to provide the Commission an opportunity to comment on the Report. DEQ will also solicit public comment on the Report prior to final submittal to EPA. The Report will be distributed to EPA, the U.S. Congress, state legislators, DEQ headquarters and regional staff, the public, industry, and environmental groups. It is anticipated that several hundred copies will be distributed. DEQ is planning to prepare a short (20 to 30 page) public summary document for wider distribution.

Content:

Information in the Report is divided into four main sections and several appendices:

- Section 1 contains an Executive Summary;
- Section 2 contains Background Information on the state's Water Quality Program within the Department of Environmental Quality (DEQ), on the Clean Water Act, and on other state and federal regulations. It also provides some geographic statistics for the state.
- Section 3 contains the state's Water Quality Assessment information required by EPA. Most of this information is in the form of tables which list numbers of river miles, lake acres, and estuarine acres which support or do not support the designated beneficial uses. Information on toxics, public health, wetlands, and long-term water quality trends is also reported in this section. Groundwater assessment information is summarized within the Groundwater Quality Program description in Section 4.3.
- Section 4 describes the Water Quality Program's Activities and Accomplishments for the two-year reporting cycle. The section is divided into subsections which reflect the organization and responsibilities of DEQ's Water Quality Program. A detailed table of contents can be found at the beginning of Section 4 to make it easier to find specific information. A summary of the Water Quality Program organization can be found in Section 2.4.

The Report's appendices contain information which supplements the

Meeting Date: July 23, 1992  
Agenda Item: F  
Page 3

main text. The information contained in Appendices A, B, and C are required by EPA; Appendix A format is, however, determined by DEQ.

- Appendix A is a summary of DEQ's monitoring data for the past 10 years, organized by basin. Appendix B describes the criteria used for evaluating the data in Appendix A. Appendix C contains definitions of terminology used for the water quality assessment in Section 3.
- Appendix D lists the sampling stations in DEQ's ambient monitoring network and the parameters and times sampled.
- Appendix E contains tables and graphs referenced in Section 3.9, Trends in Water Quality. Long-term trends are presented for selected sites in the Willamette, Tualatin, Grande Ronde, and Coquille Rivers.
- Appendix F contains a summary of monitoring sites and parameters included in DEQ's intensive monitoring efforts in 1990-92. These studies included Bear Creek and the Coquille, Klamath, Grande Ronde, and Willowa Rivers.
- Appendix G contains drainage basin maps for the state. The maps are produced by the Oregon Water Resources Department.
- Appendix H contains maps which indicate the locations of shellfish monitoring sites in Oregon's estuaries.
- Appendix I is the Strategic Management Plan for the Department of Environmental Quality.
- Appendix J is a report prepared by DEQ for the Governor's Watershed Enhancement Board titled A Survey of Natural-Resource Inventory, Monitoring, and Data Base Programs Useful in Understanding Watersheds in Oregon.
- Appendix K is an excerpt from EPA's Guidance on Water Quality-based Decisions: The TMDL Process.

Meeting Date: July 23, 1992  
Agenda Item: F  
Page 4

Special Interest:

**APPENDIX A--WATER QUALITY DATA SUMMARY**

DEQ routinely monitors approximately 3,500 miles of streams in its ambient monitoring program. These streams receive approximately 90 percent of the point source loads for the state. In addition to the routine sampling at established river and estuary stations, DEQ also conducts intensive studies on water quality limited waterbodies where water quality standards are being violated, conducts compliance monitoring for waste discharge permits, performs bioassessments, and directs special studies.

DEQ's stream monitoring data is summarized in Appendix A and is presented by basin. River miles are evaluated based on water quality standards and are categorized as "fully", "partially", or "not supporting" beneficial uses. It is important to note that the data summary table lists only those parameters for which standards are being violated for an established percentage of samples. Stations within a listed stream reach are not included if beneficial uses are fully supported.

Separate assessment tables are included in Appendix A for lakes and for groundwater.

**OUTSTANDING RESOURCE WATERS**

The EQC directed DEQ to present a list of candidates for designation as Outstanding Resource Waters (reference OAR 340-41-026(1)(a)(d)). DEQ requested nominations from other state and federal agencies. Lack of response prompted DEQ staff to assemble a list of candidates for EQC consideration. The list includes nine waterbodies which were taken from a larger list of priority waterbodies (i.e., National Wild and Scenic Rivers, State Scenic Waterways, and waterbodies located in National Parks, State Parks, and National Wildlife Refuges). Further screening of the candidate waterbodies will be conducted prior to presentation to the EQC in the fall of 1994. Nominations will also be pursued during the Triennial Standards Review process.

## **WATER QUALITY LIMITED AND TMDL LISTS**

To comply with requirements of Section 303(d) of the Clean Water Act and Oregon Administrative Rules, the 305(b) Report contains a list of water quality limited waterbodies. This list, found in Appendix A, includes those streams, lakes, and estuaries where water quality criteria are exceeded and beneficial uses are not fully supported. In Appendix A, selected water quality limited waterbodies have been prioritized for further assessment to determine if Total Maximum Daily Loads need to be established. The 1992 list of TMDL waterbodies contains the 12 streams and 2 lakes listed in the 1990 Report, with the addition of the Columbia and Willamette Rivers for 2,3,7,8-TCDD (dioxin).

In addition to identifying specific waterbodies needing TMDLs, the Department, as required by OAR 340-41-026(4)(d), has identified particular waterbodies for follow-up water quality assessment work, the purpose being to determine whether these waterbodies specifically need TMDLs. The waterbodies identified for this type of follow-up include the Powder, Burnt, Malheur, Owyhee and Lost Rivers as well as the Tillamook and Coos Bay Areas.

The format of the data summary tables in Appendix A has been revised since the last 305(b) Report (1990). Additional information has been included, and stream reach data which were formerly combined have been listed by individual sampling station. Changes in the format should make the tables more usable and will facilitate comparisons with future data assessments. The changes do, however, limit direct comparisons with previous reports. Summaries of the beneficial-use support information in Appendix A are presented in Section 3 of the Report and the final table of Appendix A.

### General Conclusions

For a majority of the streams, lakes, estuaries, and aquifers in the state, the water quality is very good and beneficial uses are supported. There are, however, local and statewide problems that need to be addressed.

Dissolved Oxygen--This criteria is established to identify the level of dissolved oxygen (DO) in water needed to support specific aquatic beneficial uses. The various DO criteria are applied under different conditions, i.e., seasons of the year, presence of warm-water or cold-water

fisheries, presence of saltwater in rivers discharging to estuaries, etc. For example, a 95% DO saturation level needs to be maintained in waters supporting spawning. The DO criteria also contains the added provision of determining the appropriate application based on a professional judgement of which beneficial uses should be present in a particular stream. Appendix A identifies several areas which need to be examined for maintenance of DO levels.

Bacteria--During this reporting period, the state had two applicable bacteria standards; fecal coliform and enterococcus. DEQ has monitored both parameters. Although no distinct relationship between the two parameters was evident when examining the data, the general pattern indicated that exceedence of the bacteria standard is a statewide problem. The Department believes that a coordinated statewide strategy for addressing bacteria problems would be the most effective and efficient way to approach this problem. A stream-by-stream TMDL approach would be resource and time intensive, whereas an overall strategy to improve bacteria controls may be more productive.

Nutrients/Algae--High levels of nutrients typically contribute to excessive growth of algae and the related aesthetic, fisheries, and dissolved oxygen problems. These problems are frequently encountered on coastal lakes and eastern and south/central Oregon streams. Instances of high nutrients which are not associated with excessive algae are generally not considered as water quality problems by DEQ.

pH--Many coastal streams in Oregon have pH values below the acceptable range, while many eastern Oregon streams have pH values above the acceptable range specified by the state standard. Many of these violations occur in areas where there are no known sources which would cause the changes in pH. Further assessment is needed to determine if the pH violations are resulting from natural conditions.

Toxics--DEQ does not conduct extensive monitoring for toxics. Sampling is focussed on those areas where problems are suspected or known, and sampling usually occurs as part of a short-term study rather than as a routine effort. The areas are listed in the data summary and include the Portland Harbor, Columbia Slough, and Amazon Creek. There are, however, many other areas where monitoring for toxics should be conducted.



Meeting Date: July 23, 1992

Agenda Item: F

Page 7

DEQ's water quality assessment efforts are limited by funding and staffing resources. In the 1992 data summary, specific water quality problem areas have been identified as priorities for further assessments. In this manner, the Department hopes to provide direction for future efforts to address problems which have been identified in this data assessment. In addition to specific problem areas, the 1992 Assessment Report also assists the Department in identifying areas which, although not currently problem areas, may develop into problems without proactive efforts.

Approved:

Section:

*Paul J. Mullane*

Division:

*Lydia Taylor*

Director:

*Stephanie Hallock, Acting*

Report Prepared By: Elizabeth Thomson

Phone: 229-5358

Date Prepared: July 10, 1992

Oregon Department of Agriculture

Comment on the Staff Recommendations Concerning the

Tualatin Basin Agricultural NPS Plan

July 23, 1992

Mr. Chairman, members of the Commission my name is Chuck Craig, Assistant Administrator of the Natural Resources Division of ODA. With me is Mike Wolf, our water quality coordinator. We are here to express our support for the staff's recommendation to reapprove the Tualatin Agricultural NPS plan through April, 1993. Four major issues are defined in the report that we would like the opportunity to address from our point of view. These are Confined Animal Feeding Operations (CAFOs), the Container Nursery Program, development of ordinances, and funding.

CAFO

The Confined Animal Feeding Operations (CAFO) program seeks to eliminate water contamination problems from confined animal feeding operations. The program is operated by ODA in cooperation with DEQ. Because of limited resources, the program has operated historically in a complaint driven mode.

On the ground inspection of all 52 permitted CAFOs in the Tualatin would be equivalent to about 60% of our normal annual workload. Moving to an inspection based system necessitated the development of a rapid survey methodology.

An aerial survey was conducted in March, 1992 and constituted the first phase inspection of all of the permitted CAFOs in the Basin. We view this as an innovative methodology for moving from a primarily complaint driven system to an inspection/certification system with minimal resources. DEQ staff agreed with the approach, given the resource constraints. Open discussions have taken place between ODA and DEQ water quality and enforcement division staff on the results and followup.

Results indicate that somewhat more than half the permitted CAFOs may be out of compliance with their permits. All operators who are judged to have a high probability of being out of compliance have been officially notified by certified mail that they will be subject to an on-the-ground inspection. These have been scheduled beginning August 15, and will be performed by the Natural Resources Division and the Washington County Soil and Water Conservation District. We expect this to take up to two months to complete.

We consider compliance to mean that all discharges have been stopped with whatever temporary means are necessary, and that all operations requiring long-term solutions enter a stipulation and final order containing a compliance schedule prior to June of 1993. At present we see no problem meeting this schedule, however we have discussed the possibility of obtaining some limited staff assistance from DEQ if necessary.

About one third of the suspect operations have already requested technical assistance and are moving forward toward a solution of their problems.

With respect to the non-permitted livestock operations, our inventory found 417 operations in priority subbasins. By the way, our understanding of what we agreed to do is inventory the operations in priority subbasins not basin-wide as implied in the staff report. There may be a total of more than twice as many operations basin wide. Although problems do exist on small non-commercial and non-permitted operations, most small livestock operations will not need waste management systems as is implied in the staff report. Relatively simple management measures should suffice. But it will take time to change the situation. One-on-one technical assistance is not feasible for the multitude of operations. The small livestock operations are being addressed through three projects:

1. ODA has obtained an EPA Environmental Education Grant to produce a "Water Quality Handbook" for small farms, and to provide training for leaders of youth and adult groups (such as 4-H and saddle clubs) in water quality practices on small livestock operations.
2. The Soil and Water Conservation Commission has made a grant to the Soil and Water Conservation Districts (SWCDs) in the Tualatin to implement small farm group water quality practices and demonstration sites.
3. There is an EPA section 319 grant to the OSU Extension Service to demonstrate innovative BMPs for small livestock waste management.

These projects will need to be expanded in future years.

#### Container Nurseries

83 container nursery operations in the Tualatin have submitted letters of intent. We are planning to inspect all operations in the basin by the end of summer. We also are verifying that all of the operations in the basin are accounted for. So far our experience with this cooperative and highly progressive industry gives us every expectation of success for this program.

#### Ordinance Development

One meeting was held which included representatives from DEQ, ODA, the SWCDs and the counties from the affected area. Subsequent meetings were held between DEQ and ODA to clarify roles in the development of model ordinances for nutrient and erosion control. ODA has indicated that it would provide assistance in the development of the technical basis for nutrient and erosion control model ordinances to alleviate known problems associated with agriculturally related nonpoint source pollution in order to meet agriculture's NPS load allocations. We have also provided DEQ with a collection of ordinances from other states that could be used as the basis for constructing such an ordinance in Oregon.

We are particularly concerned about two issues. First, we are uncomfortable taking the lead in constructing regulations for which we have neither the legislative mandate to develop nor the legal authority to enforce.

Second, we feel that it is only now beginning to become clear what really needs to be regulated on agricultural lands. Here I refer to the statement in the staff report that at the present time, assurance that various levels of nutrient and erosion control will achieve loads allocated to rural sources cannot be provided by ODA. In fact no one can provide such assurance because the NPS nutrient and erosion components of existing loads are unknown. Current studies, including the legislatively funded OSU-PSU study will provide insight into the significance of these various components in December of 1992. Preliminary information from the DEQ commissioned study by OSU-- we have just received a draft copy which we will leave with staff-- indicates that sedimentation is not the source of water quality problems in the agricultural areas of the Tualatin Basin.

The data imply that the source is from groundwater inflows, and that erosion is not a major contributor to the agricultural/rural water quality problems being addressed in the Tualatin through the TMDL process. Although erosion is occurring on agricultural lands, it apparently is not getting into the stream. (Incidentally, the staff report makes a point that 4200 of 12,000 acres of highly erodible lands are subject to conservation plans. You should be aware that the remaining acreage is required by the federal Farm Bill to be managed under conservation plans by the end of 1994.) This new technical information that is now emerging may have critical implications for policy and regulatory decisions which must be made. For example, nutrient management rather than erosion control may turn out to be the major factor in the overall solution to agriculturally related water quality problems in the Basin.

DEQ cannot provide "reasonable assurance" that loads allocated to non-CAFO and non-container nursery rural sources will not be achieved. These loads have not been identified and ordinances will not provide assurance of meeting them until they are identified. As we have stated previously, the current legislatively mandated study is providing much needed technical information on this issue.

Clearly the issue of regulation and authority is one that needs to be discussed and deliberated between the two agencies. Appropriate staff of the two agencies are now engaged in the development of an issue paper that may become the foundation for decision making in this area.

#### Funding

ODA has been actively pursuing permanent funding for staffing the ODA NPS program. Staff positions and implementation funds for the ODA NPS program were requested for the 1991/93 biennium, but were not approved. ODA is currently proposing a budget add-back program for the 1993-95 biennium for \$200,000 that will provide NPS program staffing and implementation funds for Soil and Water Districts in Water Quality Limited Areas.

page 4

In addition we are supporting the revision in the 1993 session of HB3213 which would allow SWCDs to charge fees and enact ordinances in Water Quality Limited Basins. As the agency with administrative oversight authority for the SWCDs, we tried honestly to implement this statute, which we did not develop, but were advised by our assistant Attorney General that it was seriously flawed and not practical to implement. The Oregon Association of Conservation Districts and their lobbyist John Powell have established the revision of this statute as one of their top legislative priorities for the upcoming legislative session.

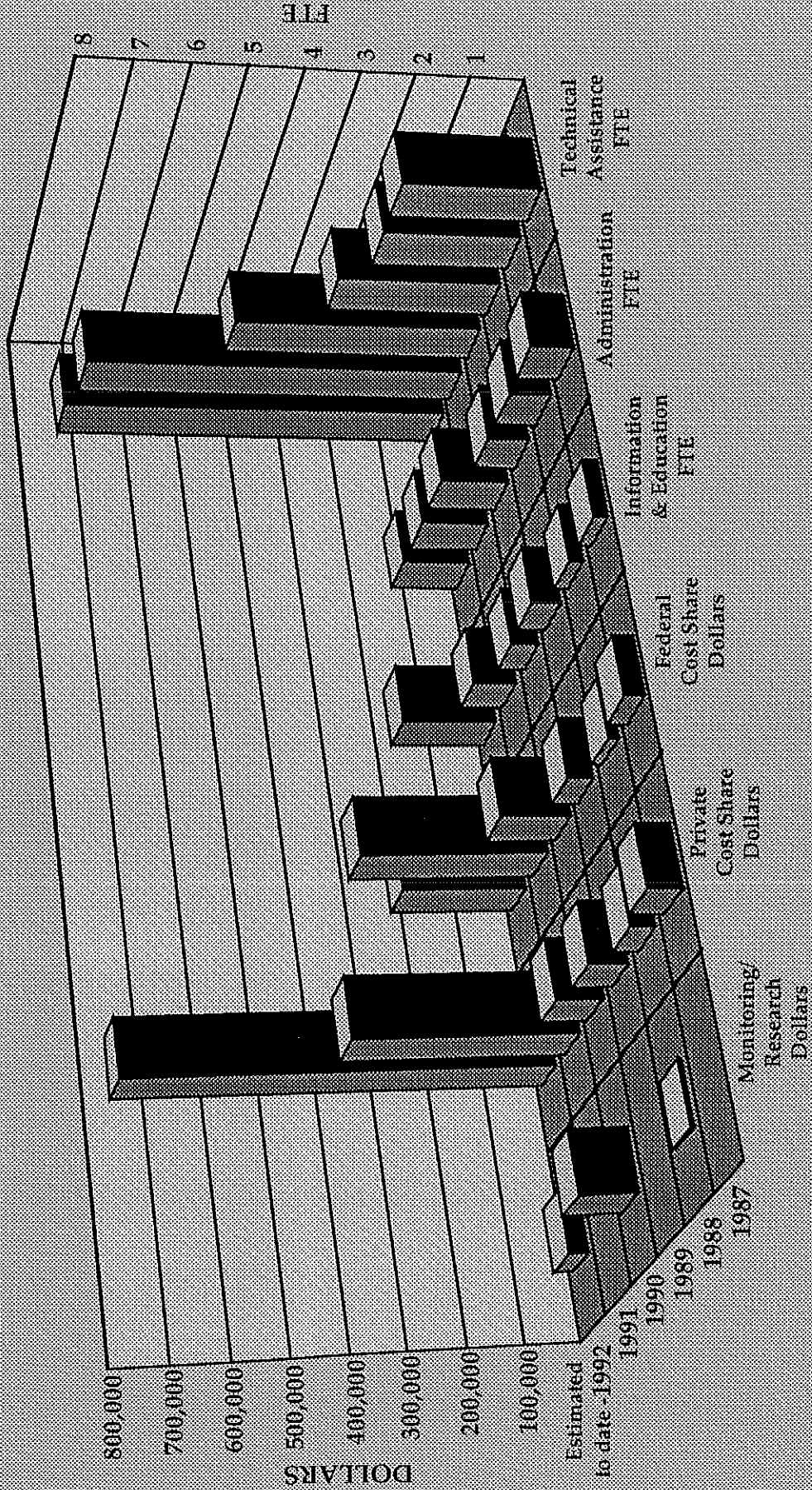
Finally, before we leave the issue of funding, we would like to present a summary (attached) of the staffing and resources committed to agricultural nonpoint source activity in the Tualatin. This has been made possible by cooperation and coordination between all of the agricultural agencies involved in the Tualatin Basin water quality effort.

#### Summary

In conclusion, we believe that we are doing what is intelligent now to address known problems such as CAFOs and container nurseries, while moving forward with the development of pilot programs and demonstrations to address potential problems such as erosion control and nutrient management. A great deal of progress has been made during the first year of implementation effort and an effective partnership has been developed between all the agricultural service agencies in the Basin.

We support the DEQ staff's recommendation to reapprove the plan through April 30, 1993, and we thank you for the opportunity present our point of view on these important issues.

# Resources Allocated to Agricultural Water Quality Planning and Implementation in the Tualatin Basin



**Letters/Testimony**

**related to**

**Agenda Item D**

*7/23/92 EOC Agenda Item  
Support Material.*

MEL WINKELMAN  
CITY of MEDFORD

"A"

\*  
Jim Hill

CITY OF MEDFORD  
PREPARED TESTIMONY  
JULY 1, 1992 HEARING

PROPOSED OAR 340-45-080  
EFFECT OF A PERMIT

TESTIMONY OF COUNCILPERSON MEL WINKELMAN

Hello, my name is Mel Winkelman. I am vice-president of the Medford City Council. I also serve as Chair for the Regional Committee which regulates the rates for the Medford Water Quality Control Plant. This committee is comprised of elected officials representing Phoenix, Jacksonville, Central Point, Medford and Bear Creek Valley Sanitary Authority. At this time, I wish to thank you for the opportunity to comment on the rule changes submitted by DEQ for your review and approval.

The purpose of my testimony today is to address the philosophy of the rule making process. My comments will be general in nature and Jim Hill, Wastewater Reclamation Administrator, will give testimony specific to the rules under consideration.

The City of Medford recognizes that the DEQ is faced with a difficult task. The 1990's promises new federal regulations not only for our waters, but also for air and land. As regulations become more stringent, compliance with standards for one medium, such as water, may generate byproducts that violate standards for other media, such as air and land. Such cross media impacts, as well as diminishing environmental benefits with increasing construction and operating costs, make administration of new regulations much more difficult. Couple these considerations with a decreasing DEQ staff and dwindling budgets at both the state and federal level, and a definite need exists to establish regulatory program priorities.

Local governments are also facing a dilemma. The implementation of Measure 5 severely reduces a major source of revenue. The decrease in timber harvesting reduces O&C revenues. Meanwhile, demands for goods and services and upkeep of public infrastructures continues to grow.

The use of utility fees to help fund these local public works needs is becoming more prevalent. Normally used for water and wastewater systems, the growth in the number of utility fees being collected impacts the ability of wastewater agencies to raise their fees and rates to cover the cost of new programs.

Utility fees are being challenged in the tax courts and recently the City of Gresham was told that their utility fee for storm drainage falls within the guidelines of Measure 5 and the ten dollar per thousand compression rate.



One of the most critical problems most Oregon communities are facing today is how to cope with the increasing demand for services with a dwindling supply of revenue. When state or federal agencies mandate programs without either funding or a revenue source, a heavier burden is then placed upon the ability of local government to comply.

Most of our residents are willing to accept taxation for the basic services of police, fire, water and sewer and will sacrifice for clean air. Examples of such a sacrifice are the successful woodstove ordinance in parts of Jackson County and a vehicle emission program which has helped significantly to clean the air in our community.

However, there is a limit not only to the willingness to pay, but to the ability to pay. Both of these have been stretched to the point that brought about Measure 5.

At the present time, we are also faced with high increases in garbage and landfill rates which are necessary to meet mandated requirements of DEQ and EQC. We all understand that it is environmentally wise to protect and to keep clean this place called planet earth. The time has come, however, when we must take a step back and look at a master plan for our environment. The plan needs to identify and prioritize all environmental needs, evaluate the related costs and determine how best to implement the required programs. This approach would avoid piecemeal rules and regulations developed to serve narrowly focused regulatory interests. For such an effort to succeed, more must be done by working with the local communities.

The City of Medford prides itself as an environmentally progressive community. The regional wastewater treatment plant has a long record of excellent performance. We have instituted a long term facilities planning effort on our own to identify the most environmentally sound method of wastewater treatment and disposal over the next 20 years. Our industrial pretreatment program is outstanding and the city voluntarily conducted an infiltration/inflow study and made necessary correction to its collection system. We are a firm believer in sound environmental programs.

Speaking on behalf of the City of Medford and the Regional Committee, I want to emphasize the importance of the EQC taking great care before adopting new environmental rules and regulations. While it is recognized that some regulations are federally mandated, please consider the following when evaluating all proposed new rules:

1. Why is the new rule being proposed if it isn't federally mandated?
2. Is the rule being developed to resolve a problem that really should be addressed through proper enforcement of existing regulations?

3. Is the proposed new rule really needed or are we changing an existing rule that is currently satisfactory merely "to be better".
4. Is there a sound scientific basis for the rule?
5. What are the financial impacts of the rule as compared with its environmental benefit?
6. What is the impact on local communities if the rule mandates a program without a funding source.

The City of Medford feels that many of the concerns regarding environmental regulations would be resolved if the EQC and local governments had a better understanding of the constraints under which each operates. I would suggest that a meeting or series of meetings be conducted in an informal setting between the EQC and local governments to do just that. As an example, a dinner meeting might be a possibility. Rather than have a strict agenda, the meeting should allow for a broad exchange of ideas and concerns. Fred Hansen of DEQ could serve as facilitator. I am hopeful that you will seriously consider such a program.

At this time, Jim Hill will address specific concerns about the proposed rule under consideration.

#### TESTIMONY OF JIM HILL

My name is Jim Hill. I am Wastewater Reclamation Administrator for the City of Medford Water Quality Control Plant which serves the communities of Phoenix, Jacksonville, Central Point, Medford, and the Bear Creek Valley Sanitary Authority. I am here today to present testimony regarding proposed OAR 340-45-080, Effect of a Permit.

Medford supports the concept of this rule. The purpose of the DEQ is to administer environmental regulations for the state and provide wastewater dischargers with a clear set of standards for compliance. The NPDES permit program, which DEQ administers on behalf of EPA, is the logical vehicle.

Wastewater treatment facilities are designed and constructed to comply with NPDES permit requirements. DEQ must accept the administrative responsibility of ensuring that compliance with the NPDES permit conditions does in fact constitute compliance with the appropriate sections of the Clean Water Act.

The City of Medford requests that the language in OAR 340-45-080 be revised to match that of section 402(k) of the Federal Water Pollution Control Act regarding permit modifications due to rule changes. We feel this rule will provide us with clear guidance and be mutually beneficial in the long run to both the regulating and the regulated communities.



CITY OF GRESHAM

1333 N.W. Eastman Parkway  
Gresham, Oregon 97030-3825

FACSIMILE TRANSMISSION COVER SHEET

DATE: July 1, 1992

TO: Lydia Taylor / 229-6124  
Name FAX number

DEQ  
Company

FROM: Garry Ott  
Name

669-2438  
Telephone number

Sanitary Sewer & WWTP  
Division

SUBJECT: 3 letters

COMMENTS:

5 pages to follow (excluding this sheet)

Our facsimile telephone number is.....(503) 661-3927  
This number is to be used for business transmission  
only, and is not available for advertising purposes.

Should you encounter difficulties with this  
transmission, please call.....(503)669-2376



Gregory E. DiLoreto  
Director

Engineering Division

Parks & Recreation  
Division  
Julie Conway  
Manager

Operations Division  
Ray Perkins  
Superintendent

Office of Customer  
Relations  
Liberty Lane  
Supervisor

Office of Solid Waste  
& Recycling  
Lynda Kona  
Manager

## CITY OF GRESHAM

Department of Environmental Services  
1333 N.W. Eastman Parkway  
Gresham, OR 97030-3813  
(503) 669-2549  
FAX (503) 661-5927

June 29, 1992

Ms. Lydia Taylor, Director  
Water Quality Division  
Department of Environmental Quality  
811 SW 6th Avenue  
Portland, Oregon 97204

Dear Ms. Taylor:

RE: PERMIT AS A SHIELD  
PUBLIC COMMENT - JULY 1, 1992

The City of Gresham appreciates the opportunity to comment on the "permit as a shield" concept proposed by DEQ.

The City supports DEQ's proposed language incorporating the concept of permit as a shield. The "permit as a shield" is consistent with federal regulations and Section 402(K) of the Clean Water Act.

A permit is a contract to perform and it is paramount that:

- The conditions of the contract be stated precisely.
- That the conditions be contained in the contract.
- That the conditions not change without knowledge of either party.

We believe the permit as a shield language meets these criteria. The proposed language allows for modification to the contract or permit to protect the environment through a public hearing process and at the same time protects the permit holder from liability due to an unknown or obscure rule and unknown rule changes.

The City believes the language in the permit will lead to the following benefits:

- Insures that relevant water quality rules will be assembled and included in one document (permit).
- Assures permit holder that change in separate regulation will not lead to unknown or unforeseen enforcement.

DEQ  
June 29, 1992  
Page 2


-Allows for consistent planning and allocation of resources to meet requirements of the permit over the life of the permit.

-Consistent with Industrial pretreatment language which is a part of the permit requirements.

-Allows DEQ to modify permits after formal procedure.

In summary, the City of Gresham supports the proposed language.

Sincerely,

  
Gareth S. Ott  
Manager

pc: Gregory E. DiLoreto, Director  
Alan Johnston, Pretreatment Coordinator  
File: DEQ



Gregory E. DiLoreto  
Director

Engineering Division

Parks & Recreation  
Division  
Julia Conway  
Manager

Operations Division  
Ray Perkins  
Superintendent

Office of Customer  
Helpline  
Liberty Lane  
Supervisor

Office of Solid Waste  
& Recycling  
Lynna Kotta  
Manager

## CITY OF GRESHAM

Department of Environmental Services  
1333 N.W. Eastman Parkway  
Gresham, OR 97030-3813  
(503) 659-2549  
FAX (503) 661-5927

June 29, 1992

Ms. Lydia Taylor, Director  
Water Quality Division  
Department of Environmental Quality  
811 SW 6th Avenue  
Portland, Oregon 97204

Dear Ms. Taylor:

RE: MASS LOAD LIMITS FOR SEWAGE TREATMENT FACILITIES  
PUBLIC HEARING

The City of Gresham appreciates the opportunity to comment on "Load Limits For Sewage Treatment Facilities" rules as proposed by DEQ. The City of Gresham supports in concept the mass loading language base following:

-The rule would clarify mass load calculation for summer.

-The rule would clarify mass load calculation for winter using winter flow. During the winter, the biological process is more difficult to control and increased variability is expected. At the same time, winter instream flows are highest.

The City does take exception to the language proposed in Section 9(b). The words "highest and best practicable treatment" are not clearly defined. It is suggested that "highest and best practicable treatment" be tied into the basin design standard so that for example, treatment that is used on the Tualatin River will not be required on the Willamette or Columbia Rivers. It is suggested that the language be modified to "highest and best practicable treatment consistent with basin standards" and that best practicable include some economic analysis.

In summary, with the exception of the language proposed in 9(b), the City supports the mass limits concept.

Sincerely,

  
Gareth S. Ott

Manager

cc: Gregory E. DiLoreto, Director  
Alan Johnston, Pretreatment Coordinator

File: DEQ



Gregory E. Dilavete  
Director

Engineering Division

Parks & Recreation  
Division

Julie Conway  
Manager

Operations Division  
Ray Perkins  
Superintendent

Office of Customer  
Relations  
Liberty Lane  
Supervisor

Office of Solid Waste  
& Recycling  
Lynnda Kotta  
Manager

**CITY OF GRESHAM**

Department of Environmental Services  
1333 N.W. Fasman Parkway  
Gresham, OR 97030-3813  
(503) 669-2549  
FAX (503) 661-5927

June 29, 1992

Ms. Lydia Taylor, Director  
Water Quality Division  
Department of Environmental Quality  
811 SW 5th Avenue  
Portland, Oregon 97204

Dear Ms. Taylor:

RE: ENTEROCOCCI BACTERIA STANDARDS  
PUBLIC HEARING - JULY 1, 1992

The City of Gresham appreciates the opportunity to comment on the "Enterococci Bacterial Standards".

The City of Gresham supports DEQ's proposed OAR language modifications replacing enterococci bacteria with fecal coliform bacterial as the indicator organism for public health.

The City believes the proposed modification is warranted for the following reasons:

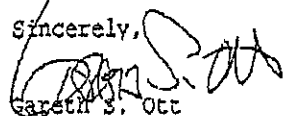
- There is no indication that the fecal standard as applied in Oregon is not effective in protecting public health.
- Enterococcus standard was intended by EPA to be an instream standard not an end of pipe discharge standard.
- To maintain kill for the enterococcus standard requires significant increase in chlorine dosage. This increase in use of toxic material is contrary to our goal of reducing of toxics.

DEQ  
June 29, 1992  
Page 2

-There is some belief that disinfection is not required during winter especially when compared with the toxic impact of chlorine.

-Energy and capital costs were not factored into the adoption of the enterococcus rule. Significant (millions) costs can be expected to be expended with unknown benefit.

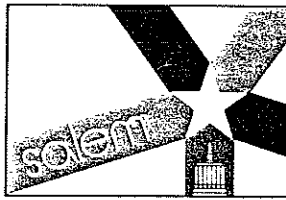
In summary, Gresham supports the proposed rule modification and suggests the fecal coliform be reused as the bacterial standard in NPDES permits.

Sincerely,  
  
Gareth S. Ott  
Manager

cc: Gregory E. DiLoreto, Director  
Alan Johnston, Pretreatment Coordinator  
File: DEQ



June 29, 1992



"SHIELD"  
"B"  
CITY  
OF SALEM,  
OREGON  
City Hall / 555 Liberty St. S.E.  
Zip Code 97301

Fred Hansen, Director  
Oregon Department of Environmental Quality  
811 SW Sixth Avenue  
Portland OR 97204

CITY MANAGER'S OFFICE  
Telephone (503) 588-6255

SUBJECT: **PROPOSED RULES:**  
**340-41-120, Winter Mass Loads**  
**340-45-080, Permit Shield**  
**340-41-205(2)(e), Bacteria Standards**

Dear Mr. Hansen:

The City of Salem generally supports the three rule modifications as proposed by the Department. While the rules as drafted do not fully protect the local jurisdiction, they do represent a compromise position that, when taken as a package, can be supported by the City of Salem. The Department is to be commended for reviewing existing rules which were adopted years, or even decades, ago, and updating the language to address today's conditions.

We have included a more detailed discussion of each of the proposed rules, attachments 1, 2, and 3. Our comments are offered to assist the Department and the Environmental Quality Commission in adopting rules which will result in both long term water quality management and in resolving the administrative appeal of our National Pollutant Discharge Elimination System (NPDES) permit.

We appreciate the opportunity to express our position on the three issues defined above. If additional information is desired, our staff is ready to assist the Department in any manner possible. We continue to express our commitment to protecting the environment through adoption of rules which are based upon scientific principles and which address water quality protection.

Very truly yours,



Gary A. Eide  
City Manager

bjs/c2/hansen.ltr

cc: Frank Mauldin, Public Works Director  
David DeMartino, Deputy City Attorney



Fred Hansen, Director  
June 29, 1992  
Page 2

## ATTACHMENT 1

### Mass Limits

The City was very concerned that the existing rule, which calculates winter discharge limitation by using summer time flow values, was totally inappropriate. While the proposed rule is not perfect, it is much better than the existing rule.

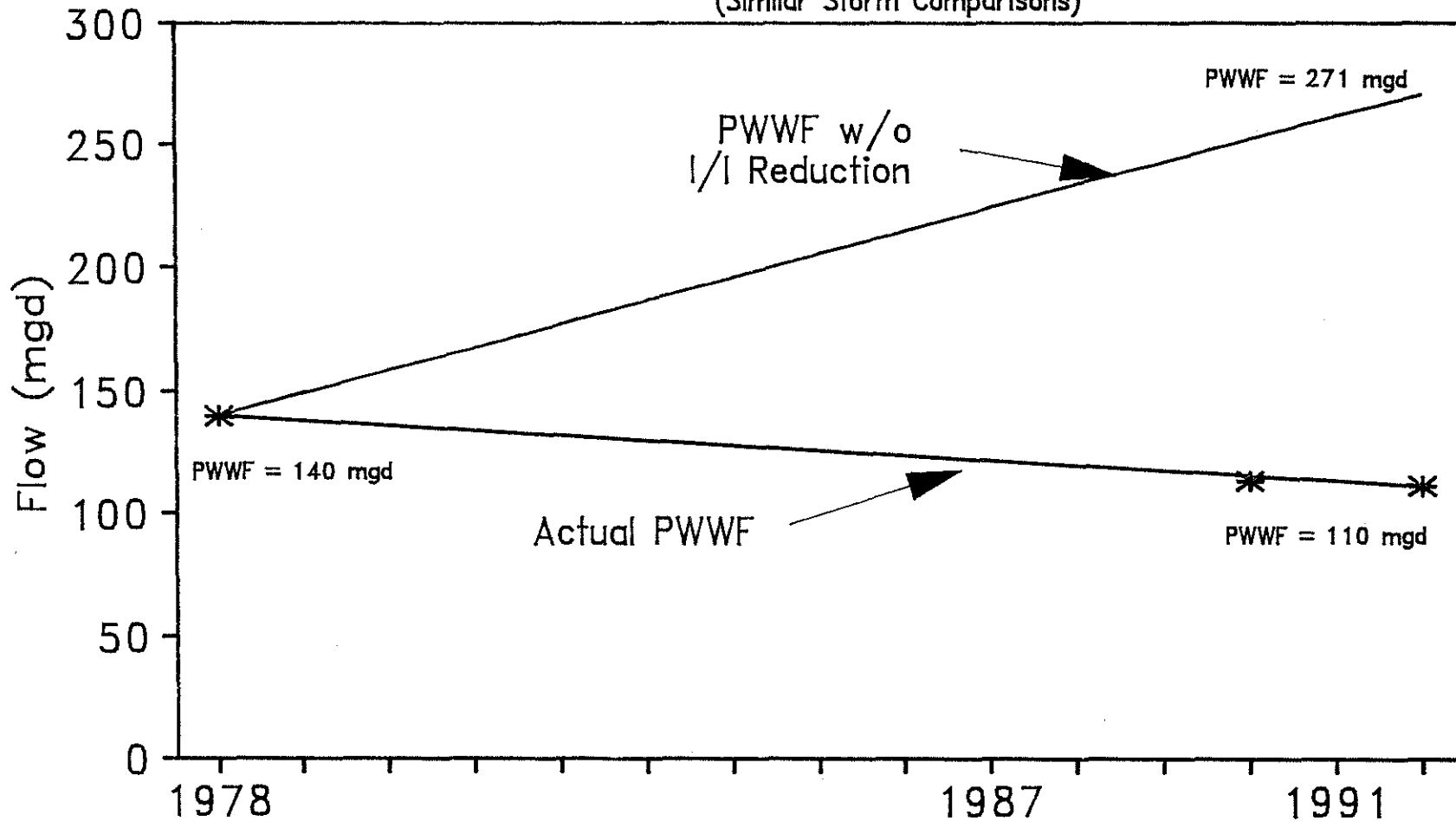
We would like to point out that, while the numeric value which will be calculated utilizing the methodology contained in the proposed rules represent a larger value than does the existing rule, it is expected that actual loading will rarely approach this numeric limit. However, during the rare occurrences where actual discharges approach the new value, the impact to water quality would be insignificant and, in fact, may not be measurable due to corresponding higher flows in the receiving stream, lower water temperatures, higher background dissolved oxygen content, and reduced or non-existent recreational activities. However, by having the higher numeric limits and the exclusion contained in O.A.R. 340-41-120(a)(c), the liability to the local agency is moderated. It is important to note that the treatment facility must continually meet the concentration-based limit associated with the Federal definition of secondary treatment, thereby still complying with the Clean Water Act.

In the existing rule the Department has been utilizing the Mass Limit value as a tool to address Infiltration/Inflow (I/I) Conditions of the local jurisdiction. We are pleased to see the separation of these two issues. The City of Salem has been investing approximately \$2.0 million per year over the past decade to address the I/I conditions. We are extremely proud of the significant results we are experiencing. As an indicator of our effectiveness, we have reviewed the impact of similar storm events during winter months on our system. In 1978, a 2-year storm event generated a total system flow of 140 million gallons per day (MGD). Had the City not instituted an effective I/I program, it is projected this volume would have increased to 271 MGD in 1992. However, through the implementation of our program the 1978 volume has been reduced to 110 MGD. This information is expressed graphically in Graph 1. In addition, the number of discharge points associated with system overflows has been reduced from 54 separate points to a 3, which only activate during peak periods. This information is represented in graph 2.

In summary, we believe the proposed Mass Limit rule adequately protects the water quality while reducing the liability of the local agency.

# Graph 1: PWWF I/I Reduction 1978-1992

(Similar Storm Comparisons)

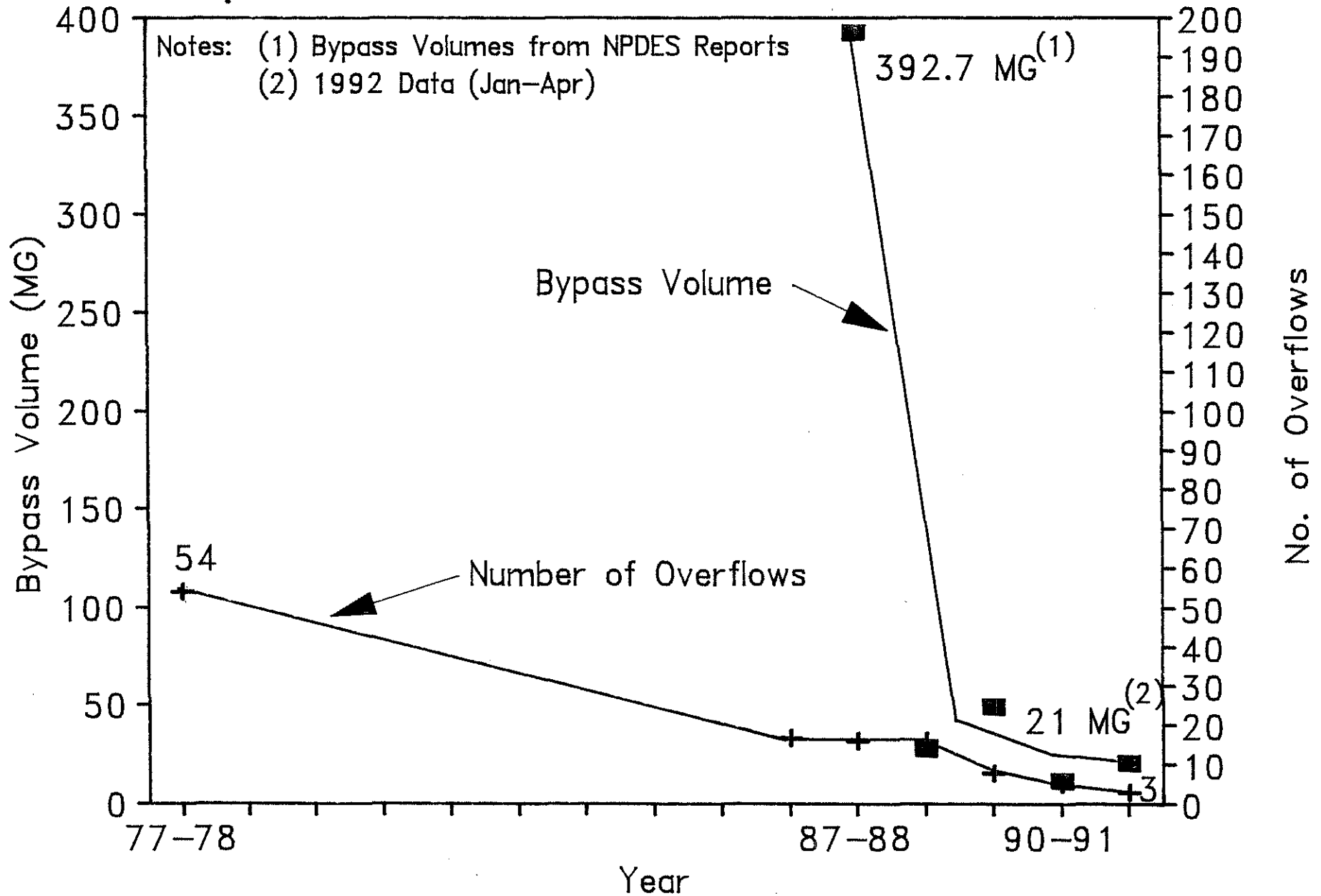


Mid-Dec 1977  
 < 2yr, 24hr Storm  
 1.5"/24 hr  
 6"/9 days

Year

Jan 6, 1990	Feb 19-22, 1992
<2yr, 24hr Storm	<2yr, 24hr
1.72"/24 hr	1.31"/24 hr
2.7"/54 hr	2.86"/54 hr

# Graph 2: Bypass Volume & Overflow Points



Fred Hansen, Director  
June 29, 1992  
Page 3

## ATTACHMENT 2

### Permit Shield

The City is concerned that under section 402(k) of the Clean Water Act, protection is offered to local jurisdictions if the permitting authority is the Environmental Protection Agency (EPA). However, under recent court decision, it has been determined that section 402(k) does not automatically follow to State issued permits. Therefore, protection must be explicit.

The proposed language does not provide the full protection as would adoption of the 402(k) language. However, it does represent a compromise position which improves the current conditions for local jurisdiction.

The City supports adoption of the proposed language.

## ATTACHMENT 3

### Bacterial Standards

The City is pleased to support the amendment to the existing rules which was adopted in July, 1991, with one modification. In our opinion the current rule, as adopted, would have caused nearly every waste water plant in the State to violate the standard without necessarily impacting beneficial uses in the receiving stream.

We believe the existing rule was adopted based upon insufficient analysis and limited data. The same concern is being expressed nationally relative to the corresponding EPA standard. Currently, additional scientific investigations are being conducted to document those concerns.

The City of Salem continues to express its commitment to adequately protect the defined beneficial uses by meeting the appropriate bacterial standard. However, the organism which is to be used as an indicator organism must be reasonably associated with any risk to the beneficial use.

The City supports rescinding the use of enterococci as the indicator organism for freshwater analysis. However, we urge the Commission to remove the date of June 30, 1995, from 340-41-205 (2)(e)(A) and eliminate all of 340-41-205(2)(e)(B), which automatically reinstates the standard to existing levels.

Upon review of the EPA criteria document and Federal Register, which indicate that for freshwater discharges the use of *E. coli* as an indicator organism is equally protective of beneficial uses. In addition, EPA identified a range of acceptable limits based upon exposure levels. However, DEQ did not include the option to utilize this equally protective indicator organism nor the use of ranges in setting limits for exposure levels. The City recommends the inclusion of range limits in future rule processes.

EPA defines the recommended concentration levels as in stream standards, yet DEQ has included the limits as end of pipe standards. This action does not take into account the efficient use of a mixing zone to comply with instream standards. This action, thereby, sets limits which are much stricter than the instream water quality standards.

The City has additional concerns that the fiscal impact of complying with the enterococci standard was not adequately addressed by the Department at the time of adoption. Recent information developed by local wastewater agencies indicates major plant revisions would be required in order to insure compliance with the enterococci standard. In addition, each facility could be required to use excessive levels of chlorine to disinfect the effluent to the level necessary to assure compliance. We are concerned that, even with altering our plant to dechlorinate the effluent, the generation of potentially toxic chlorinated hydrocarbons may result.

Fred Hansen, Director  
June 29, 1992  
Page 5

Attachment 3  
Page 2

If this would be the case, we would be placed in a position of generating a toxic effluent as a result of meeting a disinfection standard. It appears to us that, since other forms of indicator organisms are available which are equally protective of the beneficial uses, it makes no sense to artificially generate potentially toxic effluent.

Therefore, we recommend the amendment of 340-41-205(2)(e) to delete the use of enterococci as an indicator organisms and the removal of the automatic date of reactivating the use of enterococci standard.



Brandon Le Sigans  
"SHIELD" 11/1

## UNIFIED SEWERAGE AGENCY OF WASHINGTON COUNTY

June 30, 1992

Hearings Officer  
Department of Environmental Quality  
Water Quality Division  
811 S.W. Sixth Avenue  
Portland, Oregon 97204

RE: Comments on Proposed Rules:  
Mass Load Limits  
Enterococci Bacteria Standards  
Permitted Activities - Permit as a Shield

To the Department of Environmental Quality:

Unified Sewerage Agency of Washington County (USA) appreciates the opportunity to submit these comments to the Oregon Department of Environmental Quality (DEQ) on the above referenced proposed rules. USA understands and appreciates the efforts expended by DEQ in the development of these proposed rules. USA supports adoption of these proposed amendments to the Oregon Administrative Rules (OAR) respecting Mass Load Limits for Sewage Treatment Facilities, Enterococci Bacteria Standards and Permitted Activities.

The proposed rules do not reflect comments made by USA on these issues in its contested case appeal of the Rock Creek, Durham, Hillsboro and Forest Grove Facility National Pollutant Discharge Elimination System (NPDES) permits, and USA hereby reaffirms those comments. Nevertheless, USA supports adoption of the proposed rules. The proposed rules provide cost-effective environmental protection and attempt to take water quality and operational considerations into account in the development and enforcement of NPDES permit conditions.



Hearings Officer - DEQ  
6/30/92  
continued, Page 2

USA submits the following comments in support of the proposed rules:

1. Mass Load Limits For Sewage Treatment Facilities.

USA supports adoption of the DEQ's proposed amendments to the water quality rules to specify the calculation of mass load limits for biochemical oxygen demand or carbonaceous biochemical oxygen demand and total suspended solids assigned to sewage treatment facilities. USA requests, however, that the first sentence of proposed OAR 340-41-120(9)(a) be revised as follows:

"Except as noted in section (H) of this rule, for existing facilities and for facilities receiving engineering plans and specifications approval from the Department for new treatment facilities..."

Although technical in nature, this revision will make clear that the DEQ intends to apply the mass load limit calculation in OAR 340-41-120(9) to existing facilities.

The proposed rules establish a method for calculating the mass load limits. The proposed rules also refine the DEQ's existing policy regarding mass load limits imposed during the high stream flow periods and take into consideration facility design, operational capabilities and water quality. Under the existing policy, the mass load limits imposed during high stream flows would require USA to finance millions of dollars in capital expenditures with no measurable environmental benefit.

USA supports the proposed rules regarding mass load limits for sewage treatment facilities. The proposed rules establish a uniform method for calculating the limits and make no change to the existing policy as it applies to the critical low stream flow period. The proposed rules accurately base mass load limits on facility design and operational capabilities while, at the same time, consider the water quality of the receiving stream.

Hearings Officer - DEQ  
6/30/92  
continued, Page 3

2. Permitted Activities - Face Page.

USA supports adoption of the proposed rule amending OAR Chapter 340, Division 45 to reflect Section 402(k) of the Federal Water Pollution Control Act (Clean Water Act).

The proposed rule does not relieve a permittee from compliance with any Federal, Oregon or local laws. Instead, the proposed rule encourages a permittee to become aware of the standards it must adhere to and protects the permittee who fully complies with the terms of its permit. At the same time, the proposed rule reserves to the DEQ the power to modify a permit to address standards adopted or revised subsequent to permit issuance.

The proposed rule will provide permittees, the DEQ and the public with a clear understanding of the requirements that permittees must comply with under the Federal and Oregon water pollution control laws. Further, by incorporating the Clean Water Act Section 402(k) concept, the proposed rule will encourage uniform application and enforcement of the water pollution control laws. At the same time, the DEQ's ability to implement new or revised standards during the term of a permit is not diminished.

3. Revision of Enterococci Bacteria Standards.

USA supports the adoption of the proposed rule to reinstate the fecal coliform bacteria standards until July, 1995.

Recent scientific data suggests that the enterococci bacteria standard is not appropriately correlated with swimming related illnesses and cannot be attained by Oregon's sewage treatment facilities without financing millions of dollars of capital improvements. Further, because treatment facilities must provide increased chlorine contact to ensure attainment of the enterococci standard, that standard must be evaluated with respect to its impact on other water quality standards and effluent limitations.

Reinstating the fecal coliform bacteria standard will ensure protection of water quality and public health, while allowing the DEQ and other interested parties to evaluate the validity and applicability of the enterococci bacteria standard.

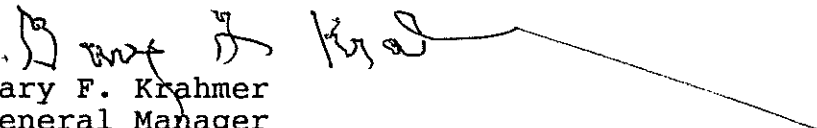
Hearings Officer - DEQ  
6/30/92  
continued, Page 4

4. Conclusion.

The adoption of these three rules by the Commission will provide the basis to resolve USA's contested case proceeding without further litigation. These proposed rules represent a thoughtful effort by the Department to address concerns raised by USA and Oregon Association of Clean Water Agencies (ACWA) while maintaining the Department's commitment to stringent water quality permit standards.

USA reaffirms its commitment to this Commission and to the citizens of this state that it will continue to invest wisely in treatment facility improvements which enhance the water quality of the Tualatin River Basin.

Sincerely,

  
Gary F. Krahmer  
General Manager

GK:ti

SHIELD

# Metropolitan Wastewater Management Commission

## COMMISSION MEMBERS

Scott Engstrom—Springfield Lay Representative  
Chris Matson—Lane County Lay Representative  
Bill Morrisette—Springfield Councilperson  
Jerry Rust—Lane County Commissioner  
Roger Rutan—Eugene Councilperson  
Mark Westling—Eugene Lay Representative

225 FIFTH STREET — SPRINGFIELD CITY HALL — SPRINGFIELD, OREGON 97477 — TELEPHONE (503) 726-3694

June 30, 1992

Department of Environmental Quality  
Water Quality Division  
811 SW Sixth Avenue  
Portland, Oregon 97204

Subject: Comments on Proposed Amendments to Water Quality Rules

This letter sets forth the Metropolitan Wastewater Management Commission's comments on the proposed amendments to water quality rules, specifically (1) mass load limits for biochemical oxygen demand and total suspended solids for sewage treatment facilities; (2) permit as a shield; and (3) the water quality bacteria standards.

### (1) Mass Load Limits for Sewage Treatment Facilities

We understand that the development of these proposed rules resulted from a negotiated settlement which attempted to resolve a series of NPDES permit appeals, and so by necessity was not subject to the usual process that accompanies rule changes. We support and appreciate the efforts of the Department's staff to resolve the issue of NPDES permit mass limits, and the commitment the Department's staff has shown to working with the sewage treatment plant operators to develop new mass limits which will meet the Department's objectives. These objectives include permit conditions which will require careful and responsible operation of the treatment plants, will not result in impairment of water quality, and contain limits which the sewage treatment facilities are capable of meeting most of the time.

In spite of careful and diligent operation, during extreme weather conditions high flows experienced at sewage treatment facilities result in an increase in the mass of biochemical oxygen demand (BOD) and total suspended solids (TSS) discharged. This increase in mass discharged is beyond the control of the permittee, and can on occasion exceed the mass limits incorporated in current NPDES permits, particularly the daily limit. The proposed rules, by increasing winter time mass limits, and providing a "trigger" flow above which the daily mass limit will not apply, will help to remove the permit compliance problems which occur for a few days because of these increased mass discharges during high rainfall conditions. At these times the rivers are also experiencing high flows, so the increases in mass discharges of BOD and TSS should not result in measurable impairment of water quality. Although the rule change will allow increases in mass discharges, the rule change should not result in any change in the way that treatment facilities are operated. The plants will continue to be

operated to provide the highest and best practicable treatment, as already required in the basin standards. These increased mass discharges due to heavy rainfall will continue to occasionally occur regardless of the permit limits. The effect of the rule change will be to permit these infrequent unavoidable mass discharges due to heavy rain, and will prevent municipalities having to invest funds to upgrade or enlarge treatment facilities to meet winter time mass limits without a return in increased water quality.

In previous correspondence with the Department, we have questioned the need for mass limits in sewage treatment facility NPDES permits which already contain concentration limits, and the authority for including mass limits in these permits for facilities which do not discharge to water quality limited streams. The proposed rule grants this authority, and also codifies the Department's existing practice of calculating weekly and daily mass limits from the corresponding monthly mass limit by multiplying the monthly mass limit by the arbitrary factors 1.5 and 2.0 respectively. EPA has developed methods for calculating monthly and daily permit limits based on a recommended compliance rate for well-operated plants of 95% and 99% respectively. These methods take into account the inherent random variability in effluent characteristics which is found in sewage treatment facilities, and would result for most facilities in a factors higher than the 1.5 and 2.0 used by the Department. The Department's current use, for example, of the 2.0 factor to calculate daily permit mass limits would result in a non-compliance rate for the daily limit greater than the EPA recommendations for most facilities when operating near design capacity. The proposed continued use of the 1.5 and 2.0 factors is only acceptable because of the other changes, such as the use of a higher flow to calculate the monthly limit, and the "trigger flow."

Several terms are used in the proposed mass limit rule which may be confusing to some readers, or might be subject to different interpretations. We suggest that clear and unambiguous definitions for the following terms be added to the rule: "hydraulic capacity of the secondary treatment portion of the facility"; "highest and best practicable treatment and control"; "design average wet weather flow."

The proposed rules do not provide any explanation of the methods that will be used by the Department for calculating mass limits for new or expanded treatment facilities. We encourage the Department to make this a priority issue, and with the assistance of the advisory committee that has already been convened, develop a procedure for these facilities that is based on sound scientific and engineering principles.

The proposed rule contains a requirement that a facility requesting a modification in winter mass limits shall submit to the Department for review and approval a program and time schedule for performing work related to infiltration and inflow (I/I) reduction. We would prefer to see the issues of I/I and mass limits separated in the rules. This is another task for

the advisory committee mentioned above, and the minimum I/I removal requirements for municipal systems should be developed following the recommendations of this committee. If it is decided that there are minimum requirements, then rule language could be developed at that time to address I/I, as a separate item.

In general, we support the proposal for rule change on mass limits, with the reservations and comments outlined above. The proposed rule will help remove permit compliance problems due to extreme weather conditions which are beyond the control of the permittees, and which do not result in impairment of water quality.

(2) Permit as a Shield

We support the rule change allowing the inclusion of language implementing section 402(k) of the Federal Water Pollution Control Act. This change will be of benefit to NPDES permittees, since the permit will include all relevant water quality rules in one place, and the requirements for the permittee to comply with the permit will be clarified. This will ensure that permittees are aware of the requirements of the permit. We agree with the Department's view that with the current increase in enforcement of permits, and the increased potential for third party lawsuits, it is reasonable to ensure that all relevant water quality rules are included in permits. The intent of this rule change is to ensure that compliance with the conditions of the permit will constitute the minimum requirements for the permittee to avoid any liability.

(3) Revision of Enterococcus Bacteria Standard

Since the adoption of the enterococcus bacteria standards for water quality in 1991, a number of concerns and questions have been raised regarding the appropriateness of the new standard. These questions resulted from the following:

- Data from sewage treatment facilities (including the Eugene/Springfield Water Pollution Control Facility) which indicate that, using existing disinfection equipment, plants would have difficulty meeting the enterococcus standard at certain times of the year. This data conflicts somewhat with data presented by the Department prior to the adoption of the enterococcus rule which suggested that most sewage treatment plants would not have difficulty meeting the enterococcus standard.

Department of Environmental Quality  
Comments on Proposed Amendments to Water Quality Rules  
June 30, 1992

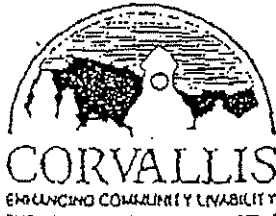
Page 5

For the reasons outlined above, we support adoption of the three proposed rules. We appreciate the opportunity to comment on these rules.

Thank you for your consideration.

A handwritten signature in cursive script, appearing to read "Katherine Schacht".

Katherine Schacht  
General Manager



CITY OF CORVALLIS

FACSIMILE TRANSMITTAL

TO: FRED HANSEN

Company: OREGON D.E.Q.  
811 S.W. 6TH AVE.  
PORTLAND, OR. 97204

FAX Number: 1-229-6124  
Contact Phone Number: 1-229-5300

FROM: TOM PENPRAZE

Department: PUBLIC WORKS  
City of Corvallis  
P.O. Box 1083  
Corvallis, Oregon 97339

FAX Number: (503) 757-6920  
Contact Phone Number: 757-6916

DATE 07-01-92

& TIME SENT: 2:45 P.M.

NUMBER OF PAGES SENT:  
(INCLUDING TRANSMITTAL)

10

SPECIAL INSTRUCTIONS / COMMENTS:

PLEASE DELIVER IMMEDIATELY  
TO THE WATER QUALITY DIVISION

COMMENTS ON PROPOSED RULES.

THANKS.





Public Works  
1245 NE 3rd Street  
P.O. Box 1083  
Corvallis, OR 97339-1083  
(503) 757-6916  
FAX (503) 757-6920

July 1, 1992

Oregon Department of Environmental Quality  
Attention: Fred Hansen, Director  
811 S.W. Sixth Avenue  
Portland, OR 97204

### COMMENTS ON PROPOSED MASS LOAD LIMITS, ENTEROCOCCI BACTERIA STANDARDS, AND PERMIT AS A SHIELD RULES

Following are the City of Corvallis' comments on the proposed rules to be presented at the July 24 Environmental Quality Commission meeting.

#### MASS LOAD LIMITS FOR SEWAGE TREATMENT FACILITIES

The City of Corvallis is in general support of the mass load limit changes the Department is proposing for wintertime flow conditions. While the methodology proposed to derive the mass limits appears to be somewhat arbitrary, it is an improvement over the existing formula. Significantly higher wintertime river flows and corresponding assimilative capacity are such that these changes will not have an adverse impact on receiving water quality.

The City does not agree with provisions for infiltration and inflow (I/I) reduction as written in sections (9) (a) (G) and (9) (a) (G) (iii). These provisions appear to be written for sewer systems that have separate sanitary and storm sewers, and should not apply to combined sewer systems. A combined system must be afforded flexibility in choosing which sources of I/I should be removed, if any, and how water quality protection is ultimately achieved. Corvallis is a combined system. Corvallis also has combined sewer overflows (CSOs) to the Willamette River.

These proposed rules require the City to submit to the Department a plan to identify and reduce infiltration and inflow within 180 days of permit renewal, and to implement the plan within one year of Departmental approval. Corvallis will receive along with its new discharge permit a Stipulated and Final Order (SFO) laying out a timeline for CSO remediation. In preliminary facility planning done by the City toward addressing CSOs, offline storage and treatment of combined sewage appears to be the most cost effective means of remediation, not I/I reduction. It would not be a wise use of limited resources to design and construct offline storage and treatment facilities, and design and fund an I/I program as proposed here. There is no net environmental benefit from doing both.

FRED HANSEN, DIRECTOR

July 1, 1992

Page 2

Corvallis will soon be undertaking a full facility planning effort, as specified in the SFO, to develop a CSO remediation plan. Some flexibility and allowances need to be included in these proposed rules to develop and implement the most cost effective alternatives for remediation. These alternatives may be different than the traditional I/I correction approach. The City wishes to reserve the right to deal with I/I in a different manner.

The City of Corvallis requests the following modifications to the proposed rules:

- \* If the most cost effective alternative for dealing with extraneous flow is something other than I/I reduction (such as offline storage and treatment), it is requested that the City be exempted from the provisions of (9) (a)(G) and (9) (a) (G) (iii).
- \* A separate category be made in the proposed rules for cities with combined sewer systems, that exempts them from the proposed I/I provisions, similar to section (9) (a) (H) for Siletz et al on mass limits. Corvallis, Astoria, and Portland could be included in this new section.

#### REVISION TO ENTEROCOCCI BACTERIA STANDARDS

The City of Corvallis supports the Department's proposal to reinstate the fecal coliform bacteria standards.

The City does not support the provision for automatic reversion back to the enterococci standard on July 1, 1995. Based on the research done by EPA, there is no justification to automatically revert back to the enterococci standard. EPA literature suggests that an alternate standard, E. coli, may be the more appropriate indicator for freshwaters.

Research done by the City of Corvallis indicates the City would not be able to comply with the enterococcus standard (see Attachment #1) without extensive modifications to existing facilities. The City's engineering consultant has developed some preliminary cost estimates for capital improvements required for the City to comply with this requirement. It has been estimated it would cost the City approximately six million dollars (see Attachment #2).

The City of Corvallis has one of the most stringent permits in the State of Oregon (10/10 BOD/SS). If Corvallis cannot comply without extensive plant modifications, it is doubtful that most other plants in the state could comply either.

Considering that there is no known water quality impairment with use of the current fecal coliform standard, and no known public health impacts due to improperly treated and disinfected wastewater, the City of Corvallis sees no compelling reason to revert back to the enterococci standard in 1995. In fact, one could argue that this would result in a net negative environmental impact if looked at more globally.

FRED HANSEN, DIRECTOR  
July 1, 1992  
Page 3

The increased use of chlorine, then dechlorination chemicals, with the subsequent development of trihalomethanes in the process would be more harmful to water quality and/or downstream water users than would be if the present standard were maintained, or EPA's alternative standard was adopted.

The City of Corvallis is committed to continued collection of comparative data on fecal coliforms, enterococci, and E. coli as proposed in the research project developed by ACWA.

The City is committed to the maintenance of a healthy environment and a clean Willamette River. The City is also committed to the wise use of its resources. It has not been proven that the change to the enterococcus standard and the required capital and operating costs will maintain or enhance water quality.

The City of Corvallis suggests the following changes to the proposed rule revision:

- \* Eliminate the July 1, 1995 automatic reversion to enterococcus.
- \* Include language to the effect that upon complete analysis of the research being conducted by ACWA and others into the appropriateness of the enterococcus and other alternative standards to fecal coliform, that the rule will then be evaluated for possible implementation of a new bacterial indicator standard.

#### PERMIT AS A SHIELD

The City of Corvallis supports the Department's proposed permit as a shield rule. While it will make NPDES permits more lengthy, it will allow the permit holder to know explicitly what the compliance requirements are, as well as affording the permit holder some protection from unwarranted third party lawsuits.

  
THOMAS M. PENPRAZE  
UTILITY OPERATIONS DIVISION MANAGER

TMP/eao

attachments

cc: Rolland Baxter, Public Works Director

## Attachment #1

City of Corvallis  
Water Quality Laboratory  
WWRP Final Effluent Study

DATE	PLANT FLOW MGD	EFF SS	CL2 RESID. /100ML	FECAL /100ML	ENTERO /100ML	COMMENTS
9/30/91	5.5	6	0.38	<4	28	SEE NOTE #1 BELOW
10/07/91	5.6	7	0.38	<4	28	
10/14/91	6.3	6	0.52	<4	<4	
10/28/91	6.2	7	0.52	6	54	
11/06/91	10.0	8	0.47	<4	76	
11/12/91	8.1	7	0.48	3	8	
11/18/91	11.0	7	0.48	<4	132	
11/26/91	24.1	8	0.44	9	920	
12/02/91	17.5	7	0.35	3	52	
12/09/91	11.5	6	0.46	<4	52	
12/16/91	7.5	6	0.47	<4	132	
12/23/91	12.6	6	0.54	<4	172	
12/30/91	7.5	7	0.45	<4	24	
1/06/92	11.0	7	0.46	6	440	SEE NOTE #2 BELOW
1/13/92	12.0	7	0.49	<3	470	
1/21/92	9.5	8	0.44	<3	310	
1/27/92	24.6	10	0.41	6	520	
2/03/92	10.6	6	0.45	4	660	
2/10/92	9.1	10	0.53	<3	173	
2/18/92	24.0	12	1.03	<3	1160	
2/24/92	17.5	6	1.07	<3	220	
2/25/92	12.5	5	1.12	<3	300	
3/02/92	11.0	8	1.40	<3	20	
3/03/92	13.0	-	1.49	<3	100	
3/09/92	10.0	10	3.02	<3	13	
3/10/92	11.0	11	3.20	<3	72	
3/16/92	8.9	8	0.53	<3	93	
3/23/92	6.8	9	0.52	<3	13	
3/30/92	9.8	6	0.35	<3	240	
4/06/92	13.3	11	0.61	<3	240	

## \*\*NOTES:

#1) SAMPLES DECHLORINATED AND HELD FIVE TO SIX HOURS BEFORE TESTING FROM 9/30/91 THROUGH 12/30/91.

#2) SAMPLES DECHLORINATED AND TESTED IMMEDIATELY UPON COLLECTION FROM 1/06/92 THROUGH 4/06/92.



Corvallis Office

April 8, 1992

CVO33699.A0

RECEIVED  
APR 09 1992  
Public Works

Dan Hanthorn  
Public Works Department  
City of Corvallis  
P.O. Box 1083  
Corvallis, OR 97339

Dear Dan:

Subject: Cost Estimate for Dechlorination, Filtration, and Chlorination Expansion

The purpose of this letter is to provide the city with an order of magnitude cost estimate for possible improvements to the wastewater treatment facility. Our limited scope of work included preparing estimates for several different improvement options at the plant. The purpose of preparing the estimates is to provide the City with an estimate of the cost associated with proposed modifications to their effluent discharge permit. DEQ is recommending that the effluent standard of 200 fecal coliform per 100 ml be replaced with a new standard of 30 enterococcus per 100 ml.

The City believes that this new enterococcus standard will be much more difficult to meet and will require significant modifications to the existing plant.

The City has determined the improvements required to meet this standard. They are as follows:

1. Construction of a tertiary sand filter
2. Construction of a second chlorine contact basin
3. Chlorination/dechlorination improvements

The assumptions made and the items included for each portion of the cost estimate are presented below along with the total estimated cost.

Serving Oregon and Southwest Washington from two locations:

CH2M HILL Corvallis Office 2300 N.W. Walnut Blvd, P.O. Box 428, Corvallis, OR 97339  
Portland Office 2020 S.W. Fourth Avenue, 2nd Floor, Portland, OR 97201

503.752.4271  
503.224.9190

Dan Hanthorn  
Page 2  
April 8, 1992  
CVO33699.A0

## 1. Construction of a Tertiary Sand Filter

### Assumptions:

- 10 MGD average dry weather flow
- single media filtration
- no site constraints
- inadequate head available for gravity flow through filter
- filter will be constructed in close proximity to related process structures

### Estimate Includes:

- reinforced concrete filter basin
- filter media
- 2 backwash waste pumps
- 1 backwash scum pump
- filter supply pump station
  - 3 filter supply pumps
  - 2 backwash supply pumps
  - 2 sample pumps
  - support slab and wet well
  - associated piping, electrical, mechanical, I&C
  - no building structure included

Estimated Construction Cost = \$3,000,000

Contingency @ 25% = \$750,000

Engineering, Legal, and Administrative Costs @ 30% = \$1,125,000

**Total Estimated Cost = \$4,875,000**

## 2. Construction of a second Chlorine Contact Basin

### Assumptions:

- no site constraints
- new contact basin will have a volume equal to existing contact basin
- contact basin will be constructed in close proximity to related process structures

### Estimate Includes:

- reinforced concrete chlorine contact basin (below grade)
- associated piping, electrical, mechanical, I&C

Dan Hanthorn  
Page 3  
April 8, 1992  
CVO33699.A0

Estimated Construction Cost = \$400,000  
Contingency @ 20% = \$80,000  
Engineering, Legal, and Administrative Costs @ 30% = \$144,000

Total Estimated Cost = \$624,000

### 3. Chlorination/Dechlorination Improvements

#### a. Expansion of existing chlorine building for chlorination/dechlorination equipment

Assumptions:

- expansion will be constrained to 15 ft by 40 ft area on the North side of the existing Chlorine Building
- no interior walls
- building will have 13 ft high walls

Estimate Includes:

- reinforced concrete building with steel roof structure (above grade)
- monorail and hoist

Estimated Construction Cost = \$78,000  
Contingency @ 20% = \$15,000  
Engineering, Legal, and Administrative Costs @ 20% = \$19,000

Total Estimated Cost = \$112,000

#### b. Addition of Cl<sub>2</sub>/SO<sub>2</sub> Scrubber

Assumptions:

- no site constraints
- scrubber is required if any modifications are made to the existing chlorination process or if dechlorination is accomplished with SO<sub>2</sub>

Estimate Includes:

- 1 packed tower scrubber, 3000 cfm, 1 ton capacity
- associated piping, electrical, HVAC

Dan Hanthorn  
Page 4  
April 8, 1992  
CVO33699.A0

Estimated Construction Cost = \$100,000  
Contingency @ 20% = \$20,000  
Engineering, Legal, and Administrative Costs @ 20% = \$24,000  
  
Total Estimated Cost = \$144,000

c. Expansion of Chlorination Capacity

Assumptions:

- no site constraints
- equipment added will be similar to existing equipment

Estimate Includes:

- (1) 2-ton scale
- (2) chlorinators
- (2) 1-ton chlorine cylinders
- associated piping, electrical, I&C

Estimated Construction Cost = \$52,000  
Contingency @ 30% = \$16,000  
Engineering, Legal, and Administrative Costs @ 30% = \$20,000  
  
Total Estimated Cost = \$88,000

d. Addition of Dechlorination Equipment

Assumptions:

- no site constraints
- equipment added will be housed in expanded chlorine building
- method of dechlorination will be sulfur dioxide

Estimate Includes:

- all equipment necessary including sulfunators, cylinders, vacuum regulators, and scale
- associated piping, electrical, I&C



Dan Hanthorn  
Page 5  
April 8, 1992  
CVO33699.A0

Estimated Construction Cost = \$100,000  
Contingency @ 30% = \$30,000  
Engineering, Legal, and Administrative Costs @ 30% = \$39,000

Total Estimated Cost = \$169,000

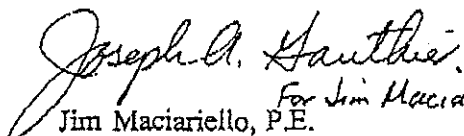
A summary of all possible improvements and their associated cost required to meet the proposed DEQ regulations regarding enterococcus are as follows:

IMPROVEMENTS	COST
Construction of tertiary sand filter	\$4,875,000
Construction of chlorine contact basin	\$624,000
Chlorination/Dechlorination Improvements	
- building expansion	\$112,000
- addition of Cl <sub>2</sub> /SO <sub>2</sub> scrubber	\$144,000
- expansion of chlorination capacity	\$88,000
- addition of dechlorination equipment	\$169,000
<b>TOTAL ESTIMATED COST</b>	<b>\$6,012,000</b>

If we can be of further assistance or if you have any comments or questions, please give me a call.

Sincerely,

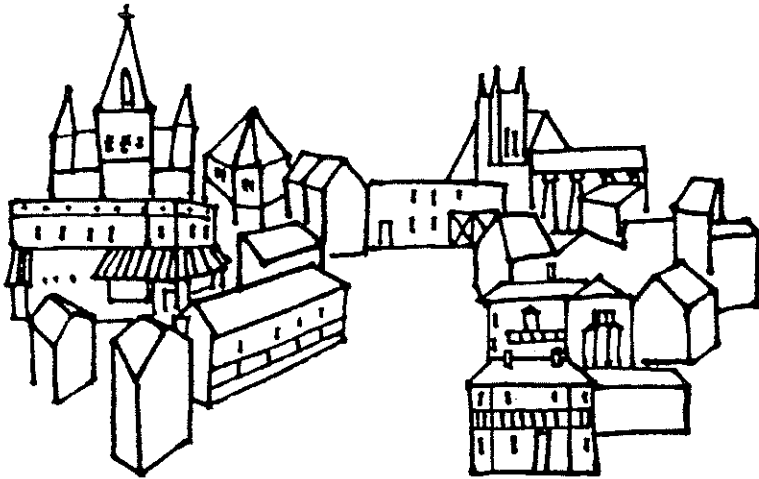
CH2M HILL

  
For Jim Maciariello  
Jim Maciariello, P.E.  
Department Manager  
Wastewater Reclamation

cc: Tom Penpraze, City of Corvallis

DAVE JEWETTE

"INTRO"  
'mass"  
'SHIELD'



# City of Albany

July 1, 1992

Fred Hansen, Director  
Department of Environmental Quality  
Water Quality Division  
811 SW Sixth Avenue  
Portland, OR 97204

Re: Comments to Proposed Rules Governing Permit Shield,  
Bacteria Standards and Mass Limits;  
Public Hearing Date: July 1, 1992

Dear Mr. Hansen:

For some time, the City of Albany has actively participated in an effort to work with the Department to streamline the NPDES permit program. We have worked individually and in conjunction with the Association of Clean Water Agencies (ACWA) to promote improved water quality while maximizing the efficient use of scarce public resources and minimizing the risk of third-party enforcement actions. More recently, Albany and three other municipalities have also been directly involved in contested case proceedings related to the reissuance of their NPDES permits.

While both processes have been difficult at times, they have been conducted in an atmosphere of mutual respect. More importantly, the vigorous exchange of views has increasingly resulted in a real effort on both sides to develop permit provisions which are fully protective of water quality while recognizing the fiscal concerns of the municipalities regarding the cost of additional facilities and procedures and those of the Department related to the

Fred Hansen  
July 1, 1992  
Page 2

cost of permit administration.

The process yielded its first major improvement with the overhaul of the NPDES Permit General Conditions which were presented to the EQC in June, 1991. The second is represented by the three proposed rule changes which are the subject of this hearing. They show respect for the key ingredients necessary to run an effective permit program-- sound permit limits, good science and protection for compliance.

Albany is in general agreement with the comments submitted by ACWA on each of the three proposed rules. Accordingly, there is no need to exhaustively reiterate them. However, a brief comment on each one is appropriate.

**MASS LIMITS - OAR 340-41-120(9)**

The Department has included mass limits in permits on nonwater quality limited streams for many years. Although the mass limits were unduly restrictive during periods of high stream flows, they presented no real problem until the last few years. Until then, enforcement was the sole prerogative of the Department and permittees who conscientiously operated their plants could reasonably expect the Department to exercise its discretion in situations where extreme wet weather conditions led to occasional mass limit violations with no adverse water quality impact. Unfortunately, changes in the Clean Water Act have led to an ever increasing number of third-party "enforcement" lawsuits over the last few years. Often, they have sought substantial penalties for technical permit violations. This is a national phenomenon not one solely related to Oregon. As a result, municipalities were faced with only two alternatives-- either spend millions of dollars on facility modifications which would not measurably improve water quality or vigorously pursue modification of their permits to appropriately define applicable effluent limits without jeopardizing water quality. Obviously, only by doing the latter could cities like Albany properly protect the interests of their tax and rate payers particularly in these lean economic times.

As stated in the ACWA's comments, we continue to believe that mass limits are not appropriate in permits for

Fred Hansen  
July 1, 1992  
Page 3

non water quality limited streams. In addition, we share ACWA's concerns with regard to the calculation method for daily and weekly mass limits as well as the need for clarification of certain definitions used in the proposed rules. However, Albany can accept the changes proposed by the Department as they apply to existing facilities. Adoption of the changes to OAR 340-41-120(9) as proposed would result in the resolution of the mass limits issue in the pending contested case proceeding for Albany's permit.

**BACTERIA STANDARDS - OAR 340-41-445(2)(e) (Willamette Basin)**

The second key ingredient in an effective NPDES permit program is the application of good science. Upon the completion of the Triennial Review in 1991, the Department proposed and the Commission changed the instream bacteria standard from fecal coliform to enterococcus based in large part on an EPA study and recommendation. Since that time, substantial evidence has developed that the new standard is not appropriately correlated with swimming related illnesses and it cannot be met by Oregon's POTWs without improvements costing approximately one billion dollars.

As a result, the Department has proposed suspension of the enterococcus standard and a return to the traditional fecal coliform standard until July 1, 1995. During this time, Albany and other municipalities will work with the Department individually and through ACWA to address the questions highlighted by the Department in the hearing notice. Albany is in general agreement with the ACWA comments on the bacteria standards and supports the adoption of the rule change as proposed.

**PERMIT SHIELD - OAR 340-45-080**

The third key ingredient in an efficient, effective permit program combines the permittee's awareness of the standards to which it must adhere and protection for permittees who fully comply with the terms of their permits. This concept has long been part of the Clean Water Act and the related EPA regulations. However, until now, it has been missing from Oregon's permit program. The rule proposed by the Department goes a long way to remedy this problem.

Fred Hansen  
July 1, 1992  
Page 4

Generally speaking, the permit shield concept adopted in Section 402(k) of the Clean Water Act allows permittees to rely on the water quality standards included in their permits. Moreover, once issued, the permits are valid for their term (generally five years) and permittees are not required to comply with standards adopted or revised subsequent to permit issuance. The rule proposed by the Department affords some, but not all of this protection. The Department's proposal allows all permittees to rely on their permits until modified but reserves to the Department the power to modify the permit prior to its reissuance.

Albany and many other permittees would prefer to have the full scope of the protection provided by the Clean Water Act. However, the rule proposed by the Department is acceptable in its present form. We appreciate the effort of Department staff to produce a permit upon which permittees can rely in the day-to-day operation of their treatment facilities. Adoption of the rule in its present form will eliminate another issue from Albany's contested case proceeding.

#### CONCLUSION

The three rules before the Commission represent both the culmination of several years work on the related permit issues and the beginning of a new and more harmonious working relationship between municipal permittees and the Department. The adoption of the rules as proposed by the Department will provide the basis on which to resolve Albany's contested case proceeding without further litigation. It will also provide the springboard for future cooperation through appropriate advisory committees to produce clarifications regarding certain terms in the proposed rules, new rules or definitive policies for establishing mass limits for new and expanding municipal wastewater treatment plants and for instream bacteria standards. The Commission has Albany's commitment to support new or additional permit provisions which enhance the protection of the environment, even though they may increase the cost of operating and maintaining wastewater treatment facilities. At the same time, Albany will continue to oppose permit provisions which substantially add to the cost of operating and maintaining its wastewater treatment facilities without an appreciable environmental

Fred Hansen  
July 1, 1992  
Page 5

benefit.

We appreciate having had the opportunity to submit these comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Yeager', with a long horizontal line extending to the right.

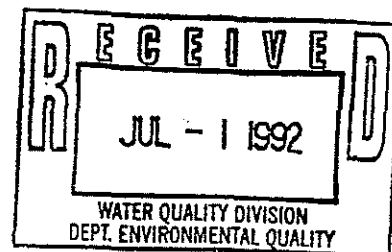
Mark A. Yeager, P.E.  
Public Works Director



# OAK LODGE SANITARY DISTRICT

June 30, 1992

Mr. Fred Hansen, Director  
Department of Environmental Quality  
811 SW Sixth Avenue  
Portland, Oregon 97204



RE: Mass Load Limits, Bacterial Standards, and Permit As A Shield

Dear Mr. Hansen:

Oak Lodge Sanitary District has reviewed the water quality rules for mass load limits, bacterial standards, and the permit as a shield provision which are currently proposed by the Department and which are out for public comment. Following this review and our discussions with Department staff, we have developed the comments contained below. We welcome and appreciate this opportunity to comment.

Our comments reflect our desire to continue our multi-faceted role of a cost effective public service provider and steward of the Willamette River. We believe these diverse roles can harmoniously co-exist to the benefit of the community and the environment when appropriate standards are adopted.

## MASS LOAD LIMITS

The Department of Environmental Quality has historically included mass limits in NPDES permits to municipal dischargers. We believe this inclusion has been improper due to inadequate authority in either Oregon Revised Statutes or Oregon Administrative Rules. We also believe there has been, and continues to be, a lack of demonstrable need for mass limits in a non-TMDL designated receiving stream; specifically the Willamette River. While the proposed change in the Administrative Rules will likely resolve the question of authority, we continue in our belief the imposition of mass load limits is inappropriate.

The Department's stated reasoning for imposition of a mass limit is enforcement of desired Infiltration and Inflow (I/I) abatement and control, and assuring proper operation of municipal wastewater treatment facilities. We believe the Department should take a direct approach to I/I control where necessary and not subject all municipalities to the "back door" approach. Appropriate rules could be developed

which deal directly with the Department's concern over I/I control. This would result in more effectively dealing with any problems deemed to have a negative impact on water quality, the health of a community, or the safety of its citizens.

Assurance of proper operation of wastewater treatment facilities as another expressed rationale of the Department for imposition of mass limits is a concern which can be alleviated in ways currently available to the Department. Municipal permittees have typically developed treatment systems and strategies designed to produce an effluent concentration acceptable to the Department as well as being acceptable environmentally. These parameters governing concentration are reinforced by the proposed percent removal requirement, current disinfection criteria, adopted sludge management plans, and a host of other operational data required and/or submitted on a monthly basis to the Department. The proposed mass limit is another "back door" approach to dealing with a specific problem. This approach penalizes all municipal permittees and their ratepayers in the interest of preventing a problem which may or may not exist, and which may already be controlled through other permit mechanisms.

We are particularly concerned with the imposition of a third criteria, mass, in addition to concentration and percent removal for wastewater treatment plant effluent discharged to a receiving stream. While on its face the proposed rule may seem to provide extensive assurance of maximum effort for permit compliance, it effectively provides a difficult matrix of compliance requirements which places municipal facilities at significant risk. Since mass is a function of flow and concentration, those periods of significant wet weather and/or high water table can have the effect of generating a mass discharge violation even though a facility is meeting effluent concentration limits. Typically these periods would occur at times when river flows are high with no impact on water quality. Federal regulations do not require mass limits on non-TMDL streams and in some cases specifically indicate them to be inappropriate for POTWs. (40 CFR 122).

We firmly believe the problems or potential problems the Department feels may exist with operations within the municipal permittee community should be addressed individually. It is neither appropriate or desirable to impose standards which may pose risk for significant public fund expenditure without demonstrable environmental benefit. The proposed mass load limit would, in all likelihood, unnecessarily burden the regulated community in an effort to remedy what is perceived as a potential problem for which we



believe remedies currently exist. The adoption of the mass load limit standard as proposed is not the appropriate answer to either the I/I issue or the issue of proper operation of municipal wastewater treatment facilities.

Certainly, the exclusion of any degree of mass discharge to any receiving stream can be argued to be beneficial to the environment. However, practical application of such a philosophy would be economically infeasible. Further, without similar regulation of industry, agriculture, forestry, storm drainage and surface water management, the benefits would be miniscule at best. In these times of fiscal restraint we believe the necessary science and cost benefit relationships must preclude the adoption of new standards in order to maintain credibility, public acceptance, and governmental accountability. A holistic approach is warranted.

We understand the Department is planning to convene an advisory committee to develop recommendations for establishing mass limits for new or expanding treatment facilities. We urge the Department to hold the proposed rules in abeyance until such time as the committee has been established and the current Willamette River basin study has been completed. Only then can the pertinent questions and issues be addressed in a comprehensive manner.

At the very least, we believe the Department should abandon the concept of daily mass limits for municipal permittees. As previously stated, we believe daily mass limits for POTWs are improper; an opinion which we feel is supported by Federal regulations. To paraphrase Mr. William Reilly, U.S. EPA Administrator: for many years the EPA has been promulgating regulations without the appropriate science; it is time for the appropriate science.

#### ENTEROCOCCI BACTERIA STANDARDS

We applaud the Department's initiative in advocating for reconsideration of the enterococci standard as an indicator of health risk. Much conflicting information has surfaced regarding this issue and the initial study which lead to the adoption of this standard. It is proper for the Department to delay implementation of the enterococci standard until there has been sufficient time for the scientific community to resolve the serious questions which have arisen; particularly in light of the apparent success of the previously acceptable fecal coliform bacteria standard as demonstrated by the lack of any appreciable water contact illness in Oregon. We believe continuation of the use of the fecal coliform standard is appropriate at this time.

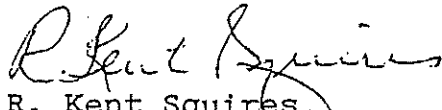
PERMIT AS A SHIELD

The proposed rule will result in significant change. Permits will be much more voluminous and therefore more complex. However, permits incorporating the "permit as a shield" language will provide appropriate protection under section 402(k) of the Clean Water Act; a significant benefit considering our litigious society. Municipal permittees will also have the necessary information available for assuring compliance in a single document. Often times, this information has been lacking in the past simply due to ignorance. Overall, we believe the proposed rule is a positive change in the municipal permitting process.

Thank you for the opportunity to comment on the proposed rules. We also want to thank your staff for their willingness to candidly discuss these issues during the past few months. We believe continuation of this type of dialogue will ultimately result in significant benefit to all the citizens of the State of Oregon.

Sincerely,

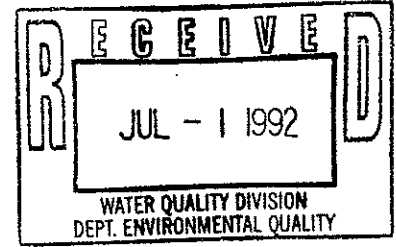
OAK LODGE SANITARY DISTRICT

  
R. Kent Squires,  
General Manager

RKS:kk

June 26, 1992

Department of Environmental Quality  
Water Quality Division  
811 S.W. Sixth Avenue  
Portland, Oregon 97204



ATTN: Joe Edney

RE: **Proposed Water Quality Rule Amendment  
"Permit as a Shield"**

Dear Joe:

We appreciate the opportunity to comment on a proposed water quality permit rule amendment which would include "Permit as a Shield" language in State issued NPDES and WPCF permits.

We are active in the wastewater evaluation and design field for numerous communities in Oregon and based on our experience, support the proposed amendment.

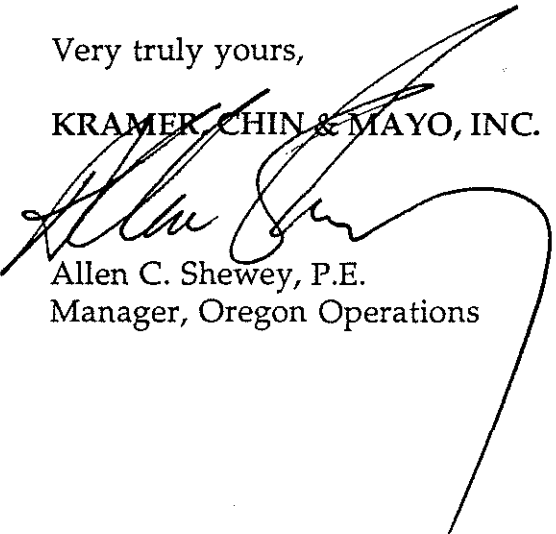
Our reason for support is that most communities rely on the Waste Discharge Permit to establish the requirements of wastewater collection and treatment facilities. NPDES or WPCF permits are often viewed as "umbrellas" by communities in Oregon. Although permits do not currently act as a shield, many communities rely on the requirements of the permit and do not have the resources or knowledge base to envision every circumstance which might occur. For this reason, we believe allowing the permit to act as a shield is reasonable and prudent.

In today's environment, a reduced potential for lawsuit against cities who are meeting stated permit requirements should be provided.

Thank you again for the opportunity to comment on this proposed rule amendment.

Very truly yours,

KRAMER, CHIN & MAYO, INC.



Allen C. Shewey, P.E.  
Manager, Oregon Operations



**Public Works**

~~Burton~~ / ~~WCAO~~  
Edney

June 15, 1992

Department of Environmental Quality  
Water Quality Division  
811 S.W. Sixth Avenue  
Portland, OR 97204

Dear Sirs:

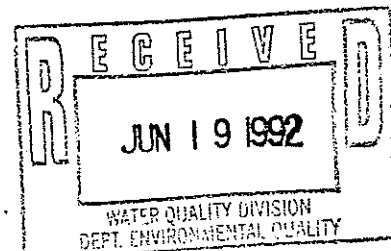
As a member, and participant in the decision making process of Oregon Association of Clean Water Agencies, The City of Philomath wholly supports the position of that association regarding proposed revisions of Enterococci Bacteria Standards, Mass Load Limits for Sewage Treatment Facilities, and Permit as a shield rules.

Thank you for our opportunity to comment.

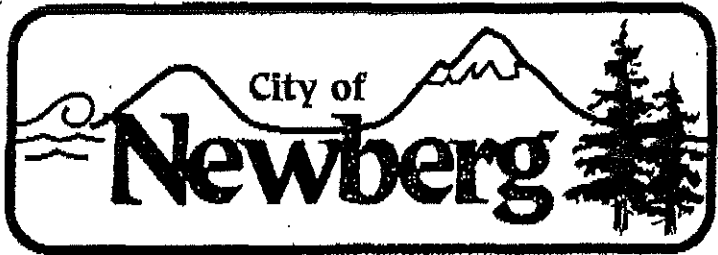
Sincerely,

Beau Vencill  
Operations Supervisor

cc: File



400 S. 16th, P.O. Box 549  
Philomath, Oregon 97370  
(503) 929-3579



Department of Public Works  
Bert S. Teitzel, P.E.  
Director

414 E. First St.  
Newberg, Oregon 97132  
(503) 537-1214  
FAX (503) 538-5393

July 1, 1992

Department of Environmental Quality  
Water Quality Division  
811 SW Sixth Avenue  
Portland, Oregon 97204

RE: Mass Load Limits for Sewage Treatment Facilities  
Revision of Enterococci Bacteria Standards  
Permit as a shield.

The City of Newberg has reviewed the proposed changes as they may impact the City's NPDES Permit. The City supports the proposed changes as drafted. Furthermore, the City of Newberg appreciates the effort of the staff of DEQ to resolve the issues related to the City of Newberg's Draft Permit and the subject changes.

If the City can provide additional information during the development of the enterococci standards, please contact us.

Sincerely,

Bert S. Teitzel, P.E.  
Director of Public Works

BST: trm

FAX-MAIL	TO: DEQ	FROM: Bert Teitzel	DATE: 7/1/92	TDS 14850
	FAX #: 229-6037	City of Newberg	PAGES INCLUDING THIS PAGE: 1	
		FAX #: 538-5393	PHONE #: 537-1214	



Home of Old Fashioned Festival



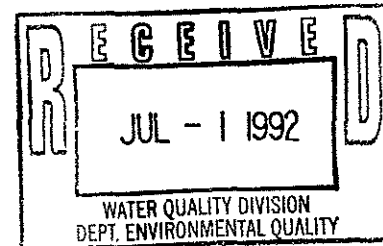
# CLACKAMAS COUNTY

Department of Utilities

BRUCE W. ERICKSON  
ACTING DIRECTOR

June 29, 1992

Fred Hansen, Director  
State of Oregon  
Department of Environmental Quality  
811 SW 6th Ave  
Portland OR 97204



RE: Comments of Tri-City Service District and Clackamas County Service District No. 1 on the Proposed Rules for Mass Limits, Bacteria Standards and Permit as a Shield

Dear Mr. Hansen:

Tri-City Service District and Clackamas County Service District No. 1, county service districts whose governing bodies are the Board of County Commissioners of Clackamas County, submit these comments to the Department's proposed rules regarding mass limits, bacteria standard and permit as a shield. Tri-City appealed the June, 1991 issuance of its NPDES permit and those proceedings are currently stayed by order of Judge Denecke, Hearings Officer, pending EQC Action on the proposed rules. Clackamas County Service District No. 1 has been issued a proposed permit but the public comment period has not commenced nor has the final permit been issued; in fact, the proceedings have been suspended by the Department pending EQC action on these proposed rules.

#### Mass Limits - OAR 340-41-120

We have asserted in the contested case process that in a technology based permit, mass limits are inappropriate unless DEQ has determined a stream is water quality limited and undertaken a TMDL process for waste load allocation. For the Willamette River, DEQ has not done this, yet still has included mass limits in the appellants' permits that subject them to risk of enforcement liability from DEQ or citizens if the permit is violated. Further, the magnitude of fines is inappropriately multiplied when we must operate within the permit concentration limits, the mass limit and the 85% removal requirement. It should be concentration or mass and 85% removal.

If mass limits remain, the Department has historically calculated the limit without applying proportionately increased weighting for winter flow conditions. As we approach design, under the present calculation methodology, it is anticipated our facilities will violate the permit four to five days per year in the winter, a time when the impact to the Willamette River would be minimal. (See ACWA letter herein incorporated by reference.) In 1986 Tri-City completed an EPA grant funded program to build a new sewage treatment plant, pump stations and interceptors for \$60 million. Those plans and design capacities were approved by EPA and DEQ. Yet, to meet mass limit requirements sought by DEQ in the current contested case proceedings 100% of the time, Tri-City anticipates having to expend an additional \$7 million before design life is reached.

The proposed rule change will not have an adverse impact on the Willamette River, yet will save our rate payers significant, unnecessary expenditures and will minimize specious enforcement proceedings or litigation. We support adoption of this rule as a minimal first step to a logical and comprehensive basin regulatory policy that treats industrial and municipal dischargers equally.

Permit as a Shield - OAR 340-45-080

We support this rule change as it will provide more certainty and help to bound our responsibilities. As regulated entities under the NPDES permit system administered by DEQ, we must be able to rely on a document that fully defines our responsibilities. This proposed rule more fully provides for that and also allows a defense to possible citizen suits that seek to impose through misinterpretation of broad permit language different statutes or requirements beyond the contemplation of DEQ or the permittee. We should not put our taxpayers or rate payers at risk for unforeseen standards. The current broad language could be so interpreted and the proposed rule solve this problem

Bacteria Standards - OAR 340-41-455(3)(e)

The comments of ACWA incorporated by reference fully state our position with respect to proposed bacteria standards and we support the proposed rule.

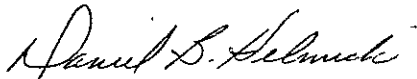
Jur 29, 1992  
Page 3

Summary

This has been a difficult process for all sides involved in the contested case proceedings, and while these districts do not believe the proposed rules are perfect, they do provide enough relief and certainty to allow the parties to go forward while further studies necessary to achieve more sound, scientifically based basin policies and rules are performed. If these rules are approved and the contested permit modified accordingly, along with issuance of DEQ's model general permit conditions approved by EQC, Tri-City is prepared to take those steps necessary to dismiss its case. If not approved or if significantly modified from those proposed by the testimony of the Association of Clean Water Agencies, herein incorporated by reference, we will of necessity have to give consideration to continuing our appeal.

Similarly, Clackamas County Service District No. 1 would not have to appeal the issuance of the Kellogg permit if the rules are approved and the changes made to its NPDES permit. Otherwise an appeal is likely.

Respectfully submitted,



DANIEL B. HELMICK  
Director of Fiscal Services

/jk

c: Mike Swanson  
Clark I. Balfour  
Terry Smith, ACWA  
Mark Yeager  
Stan LeSieur  
Floyd Collins



oregon  
association of  
**CLEAN**



Wednesday, July 1, 1992

Fred Hansen  
Director  
Department of Environmental Quality  
811 S.W. 6th Avenue  
Portland, Oregon 97204

Re: Comments On Proposed Rules - Mass Limits, Bacteria Standards,  
and 402(k) Permit Provisions.

Dear Mr. Hansen;

As you are aware, ACWA has been very concerned about NPDES permit provisions for mass limits, bacteria limits, and 402(k) permit provisions. With EPA's adoption of 'anti-backsliding', municipal governments have no choice about pressing for these changes. Given the growing public resistance to the cost of government, the public's concern about the environment, and the more litigious climate we are in today, it would be difficult for me to overemphasize the importance of these issues to our members. For this reason, ACWA is very appreciative of DEQ staff's willingness to work collaboratively to find a solution to these concerns. There have been numerous frank and illuminating discussions between DEQ staff and ACWA members that have clarified the interests of both parties. These discussions have revealed that we share the same interest in finding a regulatory mechanism that protects water quality but at the same time we do not want to impose unnecessary financial burdens on municipal residents.

In summary, most ACWA members find the proposed rule changes acceptable (with minor clarifications described later) although they do not view these as an optimum solution. Should the proposed rules be adopted by the EQC, ACWA would no longer need to pursue the permit appeal it has filed nor would we need to initiate new appeals of permit conditions regarding bacteria. Instead ACWA will be able to focus its energies on critical research and policy recommendations concerning bacteria standards, infiltration and inflow (I and I) correction, mass limits for new or expanding treatment facilities, and ongoing river quality studies. ACWA has initiated a substantial cooperative research program on these issues and we invite the Department's participation and critical review. We hope the collaborative participation between the Department and local govern-

**ACWA MAILING ADDRESS**

P.O. Box 8434  
Portland, Oregon 97207

**ACWA OFFICERS**

Chair  
Terry Smith, 687-5289  
Vice Chair  
Garry Ott, 669-2438  
Secretary/Treasurer  
Bob Eimstad, 796-7266

**ACWA MEMBER AGENCIES**

Albany  
Arch Cape Service District,  
Arch Cape  
Ashland  
Bear Creek Sanitary Authority,  
Medford  
Canby  
Cannon Beach  
Charleston Sanitary District,  
Charleston  
Clackamas County Department  
of Utilities  
Coos Bay  
Corvallis  
Dallas  
Douglas County Public Works,  
Roseburg  
Eugene  
Grants Pass  
Green Sanitary District, Roseburg  
Gresham  
Hermiston  
Irrigon  
Joseph  
Klamath Falls  
La Grande  
Lebanon  
Medford  
Metropolitan Wastewater  
Management Commission,  
Springfield  
Molalla  
Myrtle Creek  
Newberg  
North Bend  
Oak Lodge Sanitary District,  
Milwaukie  
Oregon Water Wonderland Unit II  
Sanitary District, Bend  
Pacific City Sanitary District  
Philomath  
Portland  
Redwood Sewer Service District,  
Grants Pass  
Roseburg Urban Sanitary Authority  
Salem  
Sandy  
Seaside  
Shady Cove  
South Suburban Sanitary District,  
Klamath Falls  
St. Helens  
The Dalles  
Tillamook  
Tri City Sanitary District,  
Myrtle Creek  
Troutdale  
Twin Rocks Sanitary District,  
Rockaway Beach  
Unified Sewerage Agency  
Wilsonville  
Woodburn



ments will continue and that our future efforts will yield sound recommendations for protecting Oregon's water quality. The Department's quite obvious commitment to public service and the environment is deeply respected by local government.

Here are our specific comments on the proposed rules:

### **Proposed Mass Limits Rule- OAR 340-41-120**

The NPDES permit appeals filed by ACWA, Albany, Clackamas County, Salem, and Unified Sewerage Agency have detailed our initial views on the imposition of mass limits in technology based permits. We support the use of mass limits for discharges to water quality limited streams. In the long run, ACWA members would prefer all mass limits to be water quality based and it is for that reason that we proposed and helped fund the Willamette River Study.

While ACWA continues to respectfully disagree with the Department about the need for mass limits in permits that contain concentration limits for conventional pollutants, a majority of our members can accept the proposed rule. The rule change may appear to substantially increase the mass loads available to municipal discharges especially during the winter. However, capacity limitations at all existing facilities and the 85 percent removal permit provision will prevent any significant discharge increase. This rule change protects water quality, is a positive step toward water quality based permit limits, and reduces the liability faced by local governments.

During consideration of the James River Corp. NPDES permit, the Department used 0.1 mg/L change in dissolved oxygen as an insignificant change. We expect that DEQ staff can confirm that even if all permittees apply for the increased mass limits, neither instream dissolved oxygen or suspended solids would change by a significant amount. For example, average winter time flows in the Willamette River are about seven times greater than the low flow conditions that are used to set summertime limits. A simple dilution calculation can show that the proposed rule change will have no adverse water quality impact. In addition, lower water temperatures during the winter reduces the exertion of BOD on dissolved oxygen levels. We assume that the Department will not permit a winter time mass limit increase to a stream with doubtful assimilative capacity.

The Department's own analysis has shown that no plant upgrades have been initiated as a result of mass limit exceedences alone. Permit violations are relatively rare and most often, mass limit exceedences occur along with another type of violation. Most of the difficulty municipalities have experienced with mass limits has been with wintertime daily limits. Sections (C) and (D) of the proposed rule would eliminate most of this problem. Since nearly all of these

daily exceedences occur during high river flow periods, a change in the daily limits will have no water quality impact.

If the mass limits are not changed, municipalities will have to expend extraordinary sums for treatment plant improvements to prevent this small number of mass limit exceedences. The four jurisdictions currently appealing NPDES permits found that they would have to make approximately \$180 million in improvements to eliminate daily wintertime mass limit violations that occur a few days each year.

In ACWA's view, every example the Department has cited for the need to include mass limits in technology based permits represents a circumstance where another existing permit condition or available enforcement remedy exists that provides effective regulatory authority for the Department. Five reasons have been cited for the need to include mass limits in technology based permits:

- They are needed to track and allocate the use of assimilative capacity in receiving waters.
- They ensure that permittees address I and I and maintain their sewer systems.
- They are needed to prevent a permittee from rapidly releasing the contents of a lagoon, creating a discharge that meets concentration limits but could still overload a small stream.
- They prevent permittees from meeting discharge standards by diluting the effluent rather than properly treating the wastewater.
- Mass limits ensure that treatment plant operators do not retain too large an amount of solids in the biological treatment process components as a way of reducing the quantity of sludge and operating costs.

Here are remedies we believe exist for all of these circumstances that do not require the use of mass limits:

- Current monitoring required in permits allows the Department to track mass discharges.
- An increase in the permitted use of assimilative capacity can only occur as a result of the expansion of existing facilities or addition of a new facility. The Department reviews and approves the design of new or expanding facilities.
- The effectiveness of I and I control programs continues to be a hotly

debated issue nationally. The Department's clarification of its expectations of permittees regarding I and I that is included in the proposed rule is helpful and these rules can be carried out without mass limits. An I and I Advisory Committee has been formed by the Department and the work of that group will be invaluable for developing a complete policy recommendation on I and I.

- Rapid release of the entire contents of a lagoon probably represents a violation of several permit conditions. The Department has disclosed that no permittee has ever been found to engage in this practice, however. It is very unlikely that anyone who would engage in such behavior would report their action in any case.
- Likewise, dilution of effluent to meet concentration limits is already illegal and anyone who would take such action would probably not report it. As a practical matter, the size of the water main required to deliver sufficient dilution water would be readily apparent during a routine plant inspection. In any case, inclusion of simple prohibitions of such actions in a permit would adequately solve both sudden release and dilution problems.
- The small benefits that might be gained from operating a plant close to its concentration limits are not worth the risk of more frequent permit violations. Sewage influent characteristics and all treatment processes have substantial random variations like all physical and biological systems. As a result of these variations, trying to operate a plant close to its permitted concentration limits will inevitably result in more frequent permit violations. No rational facility owner would choose this operating philosophy in today's climate since stringent enforcement would occur.
- Last but not least, all municipal permits will include the Federally imposed 85 percent removal requirement unless the stringent criteria for a reduction can be met. In the past, the Department has used mass limits and 85 percent removal requirements interchangeably.

In previous submittals, ACWA has stated the belief that the Department did not have adequate authority in Administrative Rules to impose mass limits. Clearly, the adoption of the proposed rule will resolve that problem. To that end, ACWA continues to have some concern about the method of calculating daily and weekly mass limits and finds that some clarification of key portions of the proposed rule would be very helpful:

**OAR 340-41-120(9)(a)(A) and (B)** ACWA members believe the current

method for calculating daily and weekly mass limits especially during the wintertime is arbitrary. The values of 1.5 and 2.0 that have been used to calculate weekly and daily limits from monthly mass limits are not based on any scientific principle. This is exacerbated for the winter by the use of summertime flow for the calculation of wintertime monthly mass limits. EPA has frequently stated that a well operated treatment plant would be expected to comply with all short term limits 99 percent of the time and all long term limits 95 percent of the time.

The Department used a different value for calculating the daily mass limit for James River Corp's NPDES Permit. Using a methodology described in EPA's Technical Support Document For Water Quality Based Toxics Control, the Department determined the daily mass limit that James River could be expected to comply with 99 percent of the time. The ratio of daily to monthly limits was 2.6 in that case.

Using the same EPA methodology, ACWA has conducted a statistical examination of the inherent random variability of both sampling and lab testing procedures and treatment processes at 16 Oregon treatment plants. That analysis shows that well over half of these plants would violate the winter time daily mass limits more than one percent of the time due simply to random variability when operated near design capacity. Several of the plants will also experience difficulty with the summertime daily mass limits as a result of random variability alone. The same conclusions apply for weekly mass limits but for a far smaller number of treatment plants. The continued use of 1.5 and 2.0 for calculating weekly and daily mass limits is acceptable to ACWA members only as a result of the other changes in the proposed rule. Specifically the use of average winter flow for the calculation of winter limits and the implementation of Section (C).

**OAR 340-41-120(9)(a)(C)** The term 'hydraulic capacity' and the last sentence - 'The permittee shall operate the treatment facility at the highest and best practicable treatment and control' - need to be clarified.

The maximum hydraulic capacity of the secondary portion of a facility is often much higher than the hydraulic flow at which adequate treatment can be maintained. ACWA recommends that the term 'hydraulic capacity' be defined or that the phrase 'design maximum hydraulic treatment capacity for the secondary treatment process components' be substituted.

ACWA assumes that the last sentence would not preclude plants with provisions for split flow treatment to continue to use these modes of operation during peak flow events. We also assume that all treatment components must be operated at all times within the limits of practicality and

consistent with permit limits. For example, some secondary treatment processes have start up requirements that may take longer than the duration of some peak flow events.

The use of both daily, weekly, and monthly mass limits poses some operational difficulties for implementing highest and best practical treatment. In some cases, optimum operation for the long term (sludge age for example) slightly reduces the ability of a plant to respond optimally to a one day high flow event. The clarification of the Departments expectations would be helpful in general.

**OAR 340-41-120(9)(a)(D)** From a survey of a portion of our members, ACWA has found that a majority of existing facility plans did not include a value for the 'design average wet weather flow'. From discussions with design engineers, it appears that considerable attention is given to estimating the maximum monthly average wet weather flow for design purposes but that average wet weather flow is not used as a design parameter. To ensure the equitable application of the proposed rule, it would be very helpful for the Department to develop some guidance or better definition of this parameter.

Many of the existing treatment plants were designed during an era when unrealistic expectations existed about the ability to reduce I and I. As a result several plants may exceed their peak hydraulic capacity long before they have reached their design treatment capacity. Which capacity does the Department mean by the term 'design capacity' in the last sentence of section (D)?

**OAR 340-41-120(9)(a)(G)** This clarification of the Department's expectations of permittees efforts to control I and I is helpful and acceptable as an interim approach. ACWA would urge the Department to continue the work of the I and I Advisory Committee that it has begun to further refine and develop comprehensive I and I control proposals.

The proposed one year deadline for implementation of a municipality's approved I and I program may be too short given the rate making and budget approval processes that most local governments have. Depending on when in the budget cycle the Department approves a local program, it may take 18 to 24 months for a jurisdiction to approve a budget, establish and collect increased sewer user fees, and hire personnel to run a new program.

Correction of inflow is usually cost effective but the proposed rule may

limit a local government and the DEQ in responding to other environmental problems. Occasionally, contaminated surface waters are accepted by a treatment plant at the Departments urging to as a way of resolving a localized problem. It is unclear to us if this practice would continue under this rule.

**OAR 340-41-120(9)(b)** It is our understanding that the Department plans to use an advisory committee to develop recommendations for setting mass limits for new or expanding treatment plants. In the interim, ACWA requests that an approach that is similar to what is being proposed in this rule for existing facilities would be appropriate where water quality conditions allow a waste load increase. In all cases, the method of establishing mass limits should be scientifically sound.

#### **Enterococcus And Bacteria Standards - e. g. OAR 340 -41-445(3)(e)**

In hindsight, it is very unfortunate that ACWA did not submit its comments on the Triennial Standards Review of the bacteria standard until late in the process in July, 1991. Even though it is a substantial undertaking for local governments to become effectively educated on something this complex, we deeply regret that we were unable to be more constructive in our review of this issue at that time.

During the Triennial Standards Review of the fecal coliform bacteria standard, ACWA submitted comments opposing the adoption of enterococcus for the following reasons:

- Preliminary studies at ACWA member's sewage treatment facilities indicated that existing chlorination facilities would have significant difficulty at certain times of the year in meeting the proposed enterococcus bacteria standard.
- At the same time, a paper was published in the Research Journal of the Water Pollution Control Federation which questioned the statistical analysis of the epidemiological data which led to the EPA water quality bacteriological criteria for marine waters, on which the Oregon marine water standard was based. (The author of this paper has indicated in a personal communication that the data set for fresh water was not large enough to permit a similar reanalysis of the freshwater data).
- There was no evidence that current standards were causing any public health problems.

- Last but not least, a key notice filed for the proposed change of standards did not include any fiscal impact statement. The estimated potential cost for capital improvements that may be needed at Oregon municipal wastewater treatment plants to meet the proposed enterococcus standard could be as high as \$1 billion (this assumes that filtration would be necessary to achieve the proposed level of disinfection). While a fiscal impact statement was included with at least one of the public notices, it did not address the potential cost to local government. As a result, the process for adopting the enterococcus standard that is being amended was procedurally and substantively flawed.

During the Triennial Standards Review, a key difference between the Department staff and municipal officials was the ability to comply with the proposed enterococci standard. Periodically, DEQ performs parallel sampling and lab analysis of effluent. Based on those samples, the Department concluded that most treatment plants would have little difficulty complying. However, lab results from the local treatment plants were finding dramatically different results. The local results were showing that not only was there frequent difficulty with compliance (20 to 30 percent of wintertime samples exceeded the proposed standard) but when an exceedance occurred, enterococci densities were sometimes 100 to 1,000 times the proposed standard. We now believe that an unknown factor is causing the results of samples left in cold storage for shipment to DEQ's lab to differ from samples analyzed immediately.

Oregon has one of the best communicable disease reporting systems in the nation. The state has used fecal coliform as the indicator organism for many years, with apparent success, since swimming related illness is not common in Oregon. However, recent research studies strongly suggest that the relationship between fecal coliform densities in recreational waters and illness is poor, and that a better relationship exists between enterococci or *E. coli* densities and illness. At this time no one is able to explain the apparent conflict between Oregon's practical experience and these recent research results. Especially puzzling is the fact that *E. coli* is a member of the fecal coliform group.

All previous studies including the EPA research that led to the recommendation to use either enterococci or *E. coli* as a standard have been criticized for not controlling for non-water related or confounding factors (such as subjects' prior medical history, and recent food consumption). A soon to be published study conducted in the U.K., which included confounding factors, appears to indicate that fecal streptococci (the family of bacteria that includes enterococci) might be the preferred indicator organism but at higher densities that proposed by EPA. This study seems to confirm that confounding factors significantly influence the apparent relationship between bacteria densities and illness rates. (Unfortunately, the author has asked that we not circulate the report prior to



publication.) Other studies are underway in Europe that we expect will shed more light on this conflicting information.

Several ACWA members have in the last few months begun a systematic effort to gather data on enterococci and E. coli levels in their plant's effluent, and to correlate these densities with other plant operational parameters, such as effluent chlorine residual and ammonia concentration, and the chlorine contact time. We are finding that enterococci are much harder to disinfect than fecal coliform. This finding is now supported by a soon to be published paper by EPA researchers, who in laboratory studies demonstrated that enterococci are much more resistant to chlorination than E. coli. Interestingly, this paper concludes with the following advice, which the Department is proposing to follow with this rule change: "Further research is needed regarding the effect of dilution and survival of enterococci in ambient waters after exposure to chlorination. This information, as well as cost-analysis in reference to anticipated changes in disinfection practice, is necessary and should be obtained prior to the establishment of new criteria for wastewater effluent quality."

Another potential problem with using enterococci as a water quality standard relates to the apparent survivability and growth of enterococci in soil and sediments. In winter months, due to erosion and resuspension of sediments in rivers, an enterococcus standard could be exceeded instream without any impact from sewage treatment plant discharges. In addition, the very high enterococci densities seen in treatment plant effluent during storm events may partially be the result of soil born enterococci entering sewer systems through I and I.

The implications of continuing with the current enterococcus standard are not trivial. To meet the standard on a year-round basis would require many sewage treatment facilities to redesign their disinfection facilities to provide for increased chlorination and contact time. Following chlorination, in order to meet the instream chlorine water quality standards, many plants would have to install dechlorination equipment. Since suspended solids appear to affect the ability to disinfect, some plants might require filters. The large financial investment required for these new facilities, coupled with the increased use of chlorine, requires greater certainty about the benefits before adopting a new bacteria standard. The increased use of chlorine is not free of risk. There will be increased risk of accidental catastrophic release during transportation and handling activities. There has been no study of the increased production of trihalo-methanes (THM's) but these compounds are believed to be carcinogenic and could pose a risk to humans from airborne or drinking water pathways.

We agree with the Department's summary in the rule change announcement of the questions to be answered in the next two years. The first two, concerning the appropriate indicator organism, and the corresponding numerical standard

values, will hopefully be answered by the expected new research results. The question of seasonal standards, and the point of application of the standard (end-of-pipe or in-stream) are policy questions to be explored in the near future. The question of the costs to modify facilities to meet a new standard is discussed above. ACWA is ready and willing to work with the Department to find the answers to these questions, to jointly review the new research data that is expected in the next few months, and to share the data we are gathering from the treatment plants. ACWA has convened a technical committee to work on this issue and we hope DEQ's participation will continue. ACWA has invited Dr. Alfred Dufour (the author of the EPA study which led to the enterococcus standard) to a conference in July to discuss these issues.

We support the Department's intention to reinstate the fecal coliform standard until July 1995. Because of the current dynamic state of the research into water quality and bathing-related illness, and the lack of data indicating that the use of the fecal coliform standard has led to human health problems, we see no problem in taking the necessary time to fully investigate the appropriateness and implications of new bacteria water quality standards. If at that time enterococci or E. coli (or another organism) is clearly the preferred indicator organism, and the criteria values are properly derived, ACWA will support the development and implementation of a new standard.

#### **Limited 402(k) Permit Provisions - OAR 340-45-080**

Simply put this proposed rule change will allow permittees to fully know what conditions they must comply with to meet their NPDES permit. As a result of a dramatic rise in the amount of enforcement actions and third party litigation over NPDES permits, local governments find it necessary to object to very broad language that has been included in past permits concerning a broad range of State administrative rules. This language not only eliminated the protection available to permittees under section 402(k) of the CWA but could be argued to have broadened the potential for NPDES permit violations well beyond water quality related matters to include a failure to comply with any DEQ administrative rule. As a result a local jurisdiction could find itself subject to a third party permit enforcement action for overlooking any of numerous administrative rules that are included in the NPDES permit simply by reference. For example, someone could argue that a permit violation could be declared if a municipality simply forgot one year to have DEQ review and approve its sewer user fee rate ordinance. Even if these arguments did not find favor in court, the defense of such a challenge is still costly.

We understand that there has been a tension between making permits complete versus keeping them short and that local governments have had mixed views about what balance to strike between these two. As a result of past experiences, however, a majority of ACWA members support the proposed rule

In the future, municipal NPDES permits will likely include more discharge limits than are currently listed as a result of this change. In the long run, there will be water quality benefits since the inclusion of a new parameter in a permit will tend to focus both DEQ staff and the permittee on the items that are important to water quality.

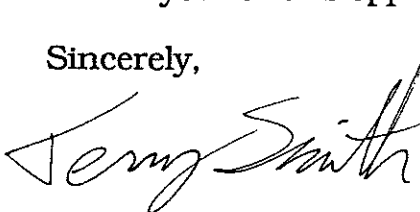
### **Summary**

Over the last few years both ACWA members and DEQ have devoted substantial effort to the issues involved in these three proposed rule changes. As can be seen from the above comments, local governments have made a substantial effort to study and understand these issues. We appreciate the Departments willingness to listen and respond to our concerns. ACWA request that these rules be adopted for the following reasons:

- The proposed rules are protective of water quality.
- Assimilative capacity of streams will be unaffected by the proposed mass limit rule either because of the high stream flows that exist when these rules apply or because another rule provision regulates any actual mass discharge increase.
- There is substantial and growing evidence that EPA was premature in recommending the adoption of enterococci or E. coli as a new bacteria standard by states.
- Adoption of limited 402(k) permit provisions will improve permittee's knowledge of what they must accomplish to maintain permit compliance thereby enhancing protection of water quality.
- Failure to adopt these rules will result in additional liability for local governments and substantially increased capital expenses without any improvement in water quality.

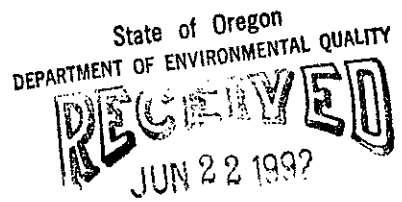
Thank you for this opportunity to comment on these rules.

Sincerely,



Terry Smith  
Chair

Oregon Department of Environmental Quality  
811 S.W. 6th Ave  
Portland, OR  
97204



16 June 1992

OFFICE OF THE DIRECTOR

To whom it may concern:

I am writing to comment on the proposed rule change entitled "permit as a shield" under consideration by the Environmental Quality Commission. I do not think the department should adopt any rules that would allow a permit to be used as a shield. I support the current position of the department which "does not relieve the permittee from compliance ... with any other law."

I would like to know why the department is considering relaxing these rules. I understand DEQ is not required to make these changes and would like to know what the impetus was for proposing the rule change. I do not see what would improve under the new rules. In closing I encourage the Commission to decline to adopt the proposed rules. Our government has too many loopholes as it is. There is no need to create new ones.

Michael Graybill  
3576 Fossil Point Lane  
Coos Bay OR 97420

Environmental Quality Commission  
D.E.Q.  
Water Quality Division  
811 SW 6th Ave.  
Portland, OR 97204

June 16, 1992

Dear Commissioner,

The department's proposal to amend the Water Quality Permit rules to allow the "permit as a shield" has puzzling implications. How can the department include language that could cover all possible violations? Doesn't this proposal aim to allow more violations to occur because they (the permit holders) are able to hold up their "shield"?

The existing language seems just as it doesn't exempt the permit holder, "from responsibilities for compliance with any other applicable federal, state, or local law, rule, standard, ordinance, order, judgement, or decree."

I suggest that the previous language is preferable to this "permit as a shield" proposal since it doesn't shield the permittee in his search for loop holes. That is, decline to adopt amendment!

Sincerely,

James Feraday  
1017 Elm Ave.  
Coos Bay, OR  
97420



Dept. of Environmental Quality  
Water Quality Division

JUL 1 1992

RECEIVED

Northwest Environmental Defense Center  
10015 S.W. Terwilliger Blvd., Portland, Oregon 97219  
(503) 244-1181 ext.707

July 1, 1992

RECEIVED

JUL 1 1992

Department of Environmental Quality  
Attn: Joseph Edney  
811 SW Sixth Avenue  
Portland, OR 972024

Water Quality Division  
Dept. of Environmental Quality

Re: Proposal to Amend the Water Quality Permit  
Rules to Include "Permit as a Shield"  
Language in State-Issued NPDES Permits

Dear Mr. Edney:

The Northwest Environmental Defense Center (NEDC) is a nonprofit group of citizens, law students, and lawyers dedicated to the protection of environmental quality in the Pacific Northwest. NEDC has members throughout the Pacific Northwest. The Oregon Chapter of the Sierra Club (The Sierra Club) is a nonprofit conservation group with over 10,000 members statewide. NEDC and The Sierra Club are particularly interested in assuring that Oregon's water resources are protected. For the reasons outlined below, NEDC and The Sierra Club vehemently oppose the inclusion of "permit as a shield" language in state issued NPDES permits.

NEDC and The Sierra Club are concerned that the NPDES permit change reflects a trend by the Department of Environmental Quality (DEQ) away from assuring the health and safety of Oregon's waters and citizens and towards accommodating polluters/permittees. To the average member of the public (and even to those groups like NEDC and The Sierra Club, who work consistently with the agency) the "permit as a shield" approach, combined with prior backsliding in permit

Joseph Edney  
Page 2  
July 1, 1992

language and water quality standards<sup>1</sup> appears to show either an "industry captured agency" or a deliberate willingness to "sell out" on the cleanliness of Oregon's waters based purely on economics. While DEQ understandably must consider the procedural needs of polluters (NPDES permittees), the agency has apparently forgotten that it has been entrusted by the citizens of this state with a substantive DUTY to maintain, protect AND whenever possible RESTORE and ENHANCE the quality of the state's waters.

Environmental Protection Agency Interpretations  
of Section 402(k) of the Clean Water Act

There is no dispute that the proposed permit as a shield standard is allowed within the language of Section 402(k) of the Clean Water Act (§ 402(k) CWA). However, such a rule is not required by the CWA. States are entitled to choose, and until now Oregon historically has chosen, to protect the waters of the state at a higher level than the minimum requirements of the CWA. There is no rational basis for retreating from that position. Certainly none has been articulated in the materials provided with the proposed rule.

The Environment Protection Agency (EPA) has taken the position that the "shield provision" functions by placing the burden on the permitting agency to correctly incorporate all appropriate and applicable regulations into the permit. Under this interpretation, a permittee is shielded from enforcement actions even in a case where the permit writer makes a mistake and leaves out a necessary standard.<sup>2</sup>

However, in E.I. DuPont de Nemours & Co. v. Train, 430 U.S. 112 (1977), the U.S. Supreme Court held that §402(k) does not allow deviations from water quality standards merely because a permit does not list a specific pollutant. The court concluded that a permit should not be issued unless all applicable standards will be met. Furthermore, the DuPont court stated that "the purpose of 402(k) seems to be to insulate permit holders from changes in various regulations

---

<sup>1</sup>For example, un-designating all Wild and Scenic Rivers, National Park waters, etc. under the guise of a new "anti"-degradation rule and the 1991 rule revision reducing permittee liability for discharging pollutants into Oregon's water, under the "single operational upset" exemption.

<sup>2</sup>See: Letter from Larry Edelman, Assistant Attorney General, Oregon DOJ, to Barbara Burton, DEQ, 9/26/91, attached.

Joseph Edney  
Page 3  
July 1, 1992

during the period of a permit \* \* \*" 430 U.S. at 138. The court did not adopt anything even close to EPA's current conclusion that the language of §402(k) functions as a complete shield for the permittee. Thus, the legality of EPA's current interpretation is still debateable.

Although the language of DEQ's proposed rule is neutral, the materials provided (See, e.g. footnote #2) imply that the EPA interpretation will control. Consequently, it appears that the new standard will result in significant degradation of Oregon's water quality, significant increases in agency time and effort in the permitting process, and will eliminate citizen participation through §505 suits in assuring high water quality standards throughout the state. This approach is not consistent with DEQ's public trust responsibilities, nor with DEQ's own planning and guidance documents.<sup>3</sup>

The Permit as a Shield Approach Will  
Result in Water Quality Degradation

Under the EPA interpretation of 402(k), the burden is on the permitting agency to enumerate all necessary standards in the permit, or else relinquish their right to enforcement. There has been no rationale presented to justify (or even explain) the proposed shifting of the burden of identifying all limitations necessary in an NPDES permit from the polluter/permittee (who is presumably the most familiar with their own discharge content) onto the shoulders of the agency staff.

Particularly when DEQ is already working within the constraints of Measure 5 budget cuts, this approach is absolutely untenable. For example, in a June 24 article in the Oregonian ("Group Spots Toxic Waters"), DEQ officials cite state spending restrictions as a factor limiting the agency's efforts to conduct pollution studies in the Willamette and Columbia Rivers. Surely an agency which is scrambling to meet its existing obligations on something as fundamental as merely identifying toxic problems on two of Oregon major rivers, is not in a position to take on the additional responsibility of ensuring that every possible relevant water quality standard or limitation is included in each NPDES permit issued. To see DEQ now advocating for such a shift in resources is mind boggling.

---

<sup>3</sup>Nor is it consistent with the approach recently adopted by Congress in the Clean Air Act reauthorization. See, e.g. 42 U.S.C. §7661c(f) (CAA §504(f)).



Joseph Edney  
Page 4  
July 1, 1992

The Permit as a Shield Language is Inconsistent  
With Established Water Quality Practices in  
Oregon, as well as With DEQ's Own Strategic Plan

Historically, the state of Oregon has placed great value upon the cleanliness of its waters.<sup>4</sup> NEDC and The Sierra Club find the permit as a shield approach particularly troubling now, as the need for water quality monitoring and clean up increases exponentially in line with the population of the Portland Metropolitan Area.

DEQ has previously recognized the importance of protecting Oregon's water quality in its Strategic Plan. However the proposed NPDES permit change undermines many of the Plan's stated objectives. The Plan defines DEQ's mission to be to "restore, enhance, and maintain the quality of Oregon's air, water and land." Plan Goal (2) states that the agency will "aggressively identify threats to public health or the environment and take steps to prevent problems which may be created." Not only will the permit as a shield approach fail to "aggressively identify" water quality problems, it may, in fact, conceal them, or at the very least delay enforcement action until a permit is up for renewal.

Furthermore, the change would shield permittees from enforcement even if such enforcement was based on higher levels of discharges of pollutants, if those pollutants are of a type that DEQ did not anticipate when it wrote the permit. This would conflict with Goal (4) of the Strategic Plan, under which DEQ seeks to "minimize the extent and duration of unpermitted releases to the environment through a technically sound compliance program."

Finally, the permit as a shield approach conflicts with the stated "high priority" of the Strategic Plan to "streamline the permit issuance process and eliminate the backlog of pending permit applications." Requiring DEQ to shoulder the burden of anticipating every possible water quality parameter that should be included in each NPDES permit, is clearly not in line with this "priority."

DEQ Has Not Presented Adequate Justification  
For the Rule Change, Nor Has the Agency  
Presented an Adequate Statement of Fiscal Impact.

Under ORS 183.335(1)(D) an agency must provide "a statement of fiscal impact identifying state agencies, units of

---

<sup>4</sup>For example, DEQ's Strategic Plan states the quality of the environment as Oregon's "most valuable asset."

Joseph Edney  
Page 5  
July 1, 1992

local government and the public which may be economically affected by the adoption, amendment or repeal of the rule and an estimate of that economic impact on state agencies, units of local government and the public" when it implements a rule change. The "Fiscal and Economic Impacts" section in the May 22, 1991 memorandum provided by DEQ does not adequately identify the affected entities. It also does not identify the increased costs to the citizens of this state of further pollution of the water and the attendant clean-up costs that will go with that pollution. Nor does it give an estimate of the economic impact on DEQ itself.

By shifting the burden (which includes analyzing, identifying, and listing every potential pollutant or parameter that each NPDES permit must cover) from the polluter on to DEQ, the rule change will clearly affect DEQ operations costs. If the agency fulfills its responsibility to the public and ensures that each permit covers all possible contaminants, the time spent issuing NPDES permits will increase dramatically, and the fiscal impact upon DEQ will increase accordingly. DEQ must provide a meaningful statement of fiscal and economic impact for the proposed NPDES permit change. To date, this rule making does not include that information.

Instead, the statement in the notice of rule making superficially predicts an "indirect positive impact" of the rule change upon four categories (municipalities, small businesses, large businesses, and other state agencies). This is so broad and ambiguous that it provides no meaningful way to assess the actual impact of the rule change on real-life economics.

DEQ Has Not Provided an Adequate  
Statement of Need for the Rule

Under ORS 183.335(1)(B) an agency must also give a "statement of need for the rule and a statement of how the rule is intended to meet the need." The "Need for the Rule" section of the May 22, 1991 DEQ memorandum is not only inadequate, it could more accurately be characterized as pathetic. The statement provided addresses why DEQ can change the rule, but remains silent on why DEQ needs to change the rule. As the speaker from the city of Medford noted, only if there is a demonstrated need for a rule should the agency propose changing the current regulatory structure.

Joseph Edney  
Page 6  
July 1, 1992

It is apparent from the documents reviewed by NEDC and The Sierra Club that the NPDES permit change proposal was prompted by a settlement agreement with several permittees.<sup>5</sup> However, the statement of need for the rule is silent on this issue. The "Need for the Rule" section in DEQ's memorandum is not only superficial, but disingenuous. To comply with the statutory requirements, DEQ must re-notice this matter with an accurate and complete statement, which at the very least offers a realistic, detailed explanation of the need for the rule.

NEDC's Public Record Act Request  
Did Not Receive an Accurate Response

On June 10, 1992, NEDC filed a Public Records Act request with DEQ for "all documents which discuss or in any way reflect the reason(s) or discussions on why DEQ has chosen to adopt the 'permit as a shield' NPDES permit language." It appears from the interoffice memoranda included in DEQ's response that the proposed rule change is a condition of or a result of a settlement agreement between DEQ and several permittees engaged in permit appeals. (See, footnote # 5).

However, NEDC was not provided with a copy of this settlement agreement or any specific information concerning it. Such an agreement, which apparently has prompted DEQ to propose abandoning not only the existing standard in favor of the less stringent federal standard, but also shouldering the additional burden of outlining all relevant pollutants in any permit, is clearly a document which "reflects the reasons why DEQ has chosen to adopt the 'permit as a shield' NPDES permit language." That this document was not provided or even identified in response to NEDC's Public Records Act request raises serious concerns about DEQ's motives and methods of operation.<sup>6</sup>

Inadequate Public Comment Opportunity

Finally, the public comment opportunity provided was inadequate. The language proposed for inclusion in permits was not provided to the public. When questioned on this issue the rule making hearings officer indicated that the public would have a chance to comment on this language as each permit was proposed. This approach ignores reality.

---

<sup>5</sup>See, Memorandum from Barbara Burton to Lydia Taylor, 10/14/91, attached.

<sup>6</sup>NEDC is currently considering whether to a separate legal action based on DEQ's apparent violation of the Public Records Act.

Joseph Edney  
Page 7  
July 1, 1992

Once standardized permit language is chosen by the agency, there is no way that that language will be altered on a permit by permit basis. To suggest otherwise is ludicrous. The agency has violated the notice requirements of the APA by failing to make the standardized permit language available for public comment.

For the foregoing reasons, NEDC and the Oregon Chapter of The Sierra Club express their shock, dismay, and outrage at the proposal to include "permit as a shield" language in state-issued NPDES permits. NEDC and The Sierra Club urge DEQ and EQC not to abandon Oregon's historical approach; not to abandon a substantive, water quality based approach because of procedural concerns of polluter/permittees; and not to abandon the agency's trust duties to the citizens of Oregon.<sup>7</sup>

Sincerely,

Karl G. Anuta

KGA:pm

cc: Frenkel, The Sierra Club  
Paul/Ames, NEDC

---

<sup>7</sup>If DEQ does implement the proposed change, NEDC insists that DEQ concurrently expand monitoring using Whole Effluent Toxicity (WET) testing. Currently, the DEQ WET Guidance (2/91) requires WET testing for sources greater than 1 MGD discharge at times "deemed necessary" by DEQ. WET testing provides a minimum safeguard to the environment, beyond numeric parameter-specific water quality standards, by measuring the actual toxicity of a discharge. If the permit as a shield language is adopted then each permit (regardless of the size of the source) must also include a requirement for WET testing on a quarterly basis, with mandatory immediate reopening and revision if toxicity is shown. This is the only way that compliance with the permit will in any way rationally constitute compliance with the Clean Water Act. NEDC and The Sierra Club were gratified to hear that Washington County's Unified Sewage Agency supports this type of increased WET testing.

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE MEMORANDUM

DATE: October 14, 1991

TO: Lydia Taylor, Kent Ashbaker, Van Kollias

FROM: Barbara Burton *Barb*

SUBJECT: Friday, October 18 Meeting on "Permit as a Shield"

The seven municipal permits appealed all cited our failure to include language making the permit a shield. We may wish to allow this new language, in an effort to settle the permit appeals. The above meeting, at 2:00 in Lydia's office, is to discuss the issue.

Our NPDES permits now include the following language:

"This permit does not relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law, rule, standard, ordinance, order judgement, or decree."

The language requested by the permittees is:

"Compliance with the terms of this permit shall be deemed compliance with Oregon and Federal water pollution control laws and regulations except for standards imposed under section 307 of the Clean Water Act for toxic pollutants injurious to human health."

The "permit as a shield" concept is permitted under federal law, and we can include it or not at our discretion. Attached is a letter from me to the AG's asking a number of questions on this issue. Also attached is Larry Edelman's response.

As I understand it, there are two concerns:

1. If rules are added or changed during the term of the permit, the permittee should not be required to know about and to comply with these new rules (with a few exceptions) unless the permit is modified.
2. The permittees should be able to rely on their permits as containing all water quality related requirements, and not have to be familiar with any other WQ rules.

This first issue is addressed with proposed language in the new general conditions (also attached).

cc: Larry Edelman, AG

September 3, 1991

Larry Edelman, Assistant Attorney General  
Oregon Department of Justice  
1515 5th Street, SW  
Portland, Oregon 97201

Re: Request for Advice "Permit As a Shield"

Dear Mr. Edelman:

An issue that came up late in the NPDES permit issuing process in June of this year was the concept of using the NPDES permit as a shield. The original request from several permittees was to include language in the permit that provided a blanket shield, that is compliance with the permit constituted compliance with all environmental laws, whether federal, state, or local. The second request was modified to language in the permit that "Compliance with the permit constitutes compliance with the Clean Water Act". The Department denied both types of requests, and issued the permits with the existing language. This issue is one of many included in the seven permit appeals.

The existing standard language in all Oregon NPDES permits now states just the opposite:

"This permit does not relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law, rule, standard, ordinance, order, judgement, or decree."

It is my understanding that the Clean Water Act does allow the "permit as a shield" concept. The Department is further considering this issue, but prior to changing the existing language we would appreciate any information or insights you might offer in the following areas:

1. Are the NPDES permits Oregon now issues complete enough that all possible relevant sections of the Clean Water Act are included in the permit?

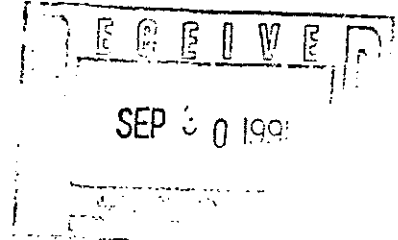


811 SW Sixth Avenue  
Portland, OR 97204-1390  
(503) 229-5696



DEPARTMENT OF JUSTICE

PORTLAND OFFICE  
1515 SW 5th Avenue  
Suite 410  
Portland, Oregon 97201  
Telephone: (503) 229-5725  
FAX: (503) 229-5120



MEMORANDUM

DATE: September 26, 1991

TO: Barbara Burton  
Department of Environmental Quality

FROM: Larry Edelman *L.E.*  
Assistant Attorney General

SUBJECT: Request for Advice on Permit as a Shield

You have indicated that an issue came up late in the NPDES municipal permit issuing process in June regarding the concept of including the federal NPDES "permit as a shield" language in DEQ issued discharge permits. The original request came from several permittees and asked specifically that DEQ include language in the permit to provide a blanket shield stating that, in essence, compliance with the permit constitutes compliance with all environmental laws whether federal, state or local. Later that request was modified to request language in the permit that compliance with the permit would constitute compliance with the Clean Water Act.

DEQ denied both requests and issued municipal permits with the existing language. You question whether the NPDES permits Oregon now issues are complete enough that all possible relevant sections of the Clean Water Act are included in the permit, and what the relative advantages or disadvantages of including the permit as a shield language might be.

DISCUSSION

The permit as a shield concept derives from section 402(k) of the federal Clean Water Act. That statutory provision is implemented through 40 CFR 122.5 which provides that except for any toxic effluent standards and prohibitions imposed under section 307 of the Clean Water Act, and standards for sewage sludge use or disposal under 405(d) of the Clean Water Act,

Barbara Burton  
September 26, 1991  
Page Two

compliance with a permit during its term constitutes compliance for purposes of enforcement with sections 301, 302, 306, 307, 318, 403, and 405(a) through (b) of the Clean Water Act.

To understand the purpose and concept of the permit as a shield language, it is helpful to examine the preamble discussion to what was originally 40 CFR 122.13 as set forth in the May 19, 1980 Federal Register Vol. 45 p. 33311.

The preamble states that the shield provision is one of the central features of EPA's attempt to provide permittees with maximum certainty during the fixed terms of their permits. The shield provision "gives a permittee the security of knowing that if it complies with its permit it will not be enforced against for violating some requirement of the relevant federal statute," in this case the Clean Water Act, which was not a requirement of the permit. The preamble notes that this shield provision does not pertain to emergency sections of the Clean Water Act.

In the preamble language EPA notes that one of the most useful purposes of issuing a permit is to proscribe with specificity the requirements that a facility will have to meet, both so that the facility can plan and operate with knowledge of what rules apply and so that the permitting authority can redirect its standard setting efforts elsewhere. The preamble notes that EPA and states are likely to make much better use of their resources if they restrict examination of permits between issuance and renewal to monitoring compliance and taking enforcement action where necessary.

Through the permit as a shield language therefore, EPA stated that it was announcing a principle by which it would bind itself that it would not take enforcement action against any person who has received a final permit except for noncompliance with the conditions of that permit. The shield provision applies to enforcement actions by EPA or an approved state as well as to enforcement through citizen suits. EPA noted in the preamble that the shield provision of the Clean Water Act does not apply to section 307 toxic effluent standards or prohibitions and it does not preclude EPA or the states from invoking their reporting and information gathering authority which, by statute, operate independently of the permit document. The preamble states that the shield provision



Barbara Burton  
September 26, 1991  
Page Three

places the burden on permit writers rather than permittees to search through the applicable regulations and correctly apply them to the permittee through its permit. This means that a permittee may rely on its EPA issued permit document to know the extent of its enforceable duties under the relevant statute or on its state issued document to the extent the state program has not adopted a more stringent approach to enforcement.

The shield protection does not preclude a permit from being modified, revoked or reissued or terminated during its term for appropriate cause as provided under either federal or state regulations. The preamble language notes that if the permit writer makes a mistake and does not include a requirement of the appropriate statute in the permit document, the permittee will neither be enforced against nor have its permit modified or revoked and reissued as a result unless there is an imminent danger to human health or the environment. Finally, the preamble language notes that the permit as a shield language is not designed to infringe on state or local law or regulations or to preempt any duty to obtain state or local assent required by law.

#### ANALYSIS

As I view the permit as a shield language, it is of relatively minor significance. It does afford some protection for the permittee in that the permittee, if it is complying with the terms and conditions of its permit, can be assured that there are no other applicable regulations or statutory provisions under the Clean Water Act, or, in a state that adopts the shield language, under the state act that might pertain. It, however, does not assure the permittee that its permit will not be reopened in the event of promulgation of a toxic effluent standard or prohibition or that its permit will not be unilaterally modified in the event of a new statutory provision applicable to the particular permittee. The permit as a shield language clearly could not protect a permittee in the event that the Legislature passed a particular statutory provision making it directly applicable to all permittees regardless of their outstanding permits. However, the permit does apparently shield the permittee from regulatory changes (other than promulgation of toxic standards) during the term of the permit under federal law. ) \*

Barbara Burton  
September 26, 1991  
Page Four

It appears to me that if the Department is inclined to adopt permit as a shield language it should do so by rule and, in doing so, it should assure that all general conditions applicable to NPDES permits issued by DEQ are specified in the rules clearly so that they can be applied by the permit writer in each NPDES permit. If the general conditions are so specified, then the permit writer need only be concerned with assuring that those are routinely incorporated in each individual permit and that the specific provisions relative to each unique individual permit are then carefully analyzed for compliance with all applicable statutory and regulatory requirements.

If DEQ is inclined to adopt the permit as a shield concept, I would recommend that we carefully match up the general conditions language that we include in state-issued NPDES permits, with the federal general conditions applicable to all permits language in 40 CFR part 122. This would assure that we are consistent with the mandatory requirements of the federal regulations, and that we are not currently overlooking any key regulatory requirements set forth in federal regulations.

I would be happy to go through these with you and to make a comparison between the existing state-issued permits and a representative federally issued permit from Region 10 to compare the conditions included and structure of the respective permits. This would probably be a beneficial exercise quite apart from the issue of permit as a shield.

\* As a final thought, you might also wish to consider a hybrid permit as a shield concept. For example, DEQ regulations could adopt the permit as a shield language, but specify that a permit would not shield a permittee from changes in regulations or standards where the Commission expressly specifies that such changes are to apply to existing permits by a specified time. This might prevent, for example, delays in implementing new water quality standards or load allocations adopted by the Commission.

dld 0462N

## 7. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege ~~[s; nor does it authorize any injury to private property or any invasion of personal rights; nor any violation of federal; state or local laws or regulations]~~.

The first part of the sentence, "the issuance of this permit does not convey any property rights of any sort, or any exclusive privileges," is a direct quote from 40 CFR, part 122.41(g) and is required to be in the permit. The remaining part of the sentence comes from 40 CFR, part 122.5(c). Part 122.5(c) is a rule intended to apply to NPDES permits, but does not specify that its language be included in the permit as a condition. The Department believes that it is redundant to have a requirement in both rule and in the permit and, as the federal rules do not mandate that it be specifically stated in the permit, it should be deleted from the General Conditions.

## 8. Permit References

Except for effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and standards for sewage sludge use or disposal established under Section 405(d) of the Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

This is added to clarify that, if a rule or statute referred to in the permit is amended during the term of the permit, the original rule or statute applies. As necessary, the Department will modify permits to include amended rules or statutes. The sections of the Clean Water Act referred to for toxics and sludge are exceptions. By law, permittees are required to comply with the most recent standards without permit modification being required.

MW\WH43\WH4325A (June 13, 1991)

### NOTE:

Changes proposed January 18, 1991 are indicated as deleted material in ~~[brackets]~~ and new material lined. Changes proposed May 20, 1991 are indicated in *italics* wherever possible with deleted material ~~[brackets]~~ and new material underlined.



July 1, 1992

Ms. Lydia Taylor, Director  
Water Quality Division  
Department of Environmental Quality  
811 S.W. 6th Avenue  
Portland, Oregon 97204

1120 S.W. 5th Avenue  
Room 400  
Portland, Oregon  
97204-1972  
(503) 796-7740

Re: Comments on proposed rules - Mass Limits, Bacteria Standards and Permit As A Shield

Dear Ms. Taylor:

Thank you for the opportunity to comment on the three rule modifications currently being proposed by the Department. The City has requested a reconsideration of the rules under review and we are appreciative that the Department has responded.

Overall, the City supports the rule changes being proposed. However we do have specific comments on each of the proposed rules. Those comments follow.

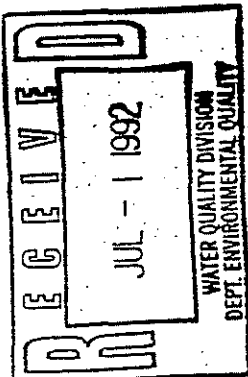
MASS LIMITS:

The City believes that, if mass load limits are used in technology based permits, for whatever reason, the formula governing their use should consider both dry and wet weather conditions. We commend the Department for proposing winter mass load limits which take into account the difference in assimilation capacity of the receiving streams in the wet winter months of the year.

Although the mass limits allowed by the proposed rule are higher than those allowed by existing practice, we believe that water quality will not be adversely impacted by implementing the proposed rule. The higher flows of the receiving stream, lower water temperatures, and higher background dissolved oxygen concentrations common to winter river conditions all combine to more than off-set a slight increase in the numeric discharge mass load limit.

Although we support the proposed rule change in that it recognizes that pollutant loads have less impact during high flow conditions, we recommend that DEQ continue to pursue mass limits based on comprehensive basin planning, understanding of the impacts from

CITY OF PORTLAND  
ENVIRONMENTAL SERVICES



Lydia Taylor  
Page 2  
July 1, 1992

point source discharges, and prioritizing pollutant control strategies.

Section 120(9)(G) states that a permittee receiving higher mass load limits under this proposed rule must develop a program for identifying and eliminating inflow. The City questions the mandatory implementation of inflow control for all agencies receiving higher mass load limits.

We recommend that inflow control programs be implemented only after an evaluation of overall municipal impacts on instream water quality demonstrates the need for such a program. This evaluation would include consideration of receiving water characteristics, pollutant loads in urban stormwater, and the need for pollutant load reduction at the POTW. If this evaluation demonstrates that inflow reduction would be effective in improving water quality then inflow reduction should be required.

We request clarification on Section 120(9)(a)(C). The term "hydraulic capacity" could mean the maximum constructed capacity or the flow at which adequate treatment can be achieved. We recommend that the term "hydraulic capacity" be more clearly defined.

**BACTERIA STANDARD:**

The City has been very concerned about the implementation of the enterococci standard. There is considerable conflicting information in the scientific community regarding its applicability as an indicator organism. Data collected at a number of municipalities in the state has caused us to question the practical application and attainability of this standard and whether attainment of the standard affords better public health protection. We welcome the reinstatement of the fecal coliform bacteria standards until July, 1995, to allow for further investigation of the applicability of the enterococci standard.

The City, along with other environmental quality agencies belonging to the Association of Clean Water Agencies, is interested in organizing and participating in a technical committee to further review the enterococci bacteria and the disinfection challenges posed by the use of enterococci as an indicator organism. We recommend that the Department participate in this effort. The City is also willing to participate in data collection over the next three years to allow a better understanding of the impacts of the new standard on treatment plant facilities and operations.

Lydia Taylor  
Page 3  
July 1, 1992

PERMIT AS A SHIELD:

The City has been concerned that the protection offered to local jurisdictions permitted directly by EPA under section 402(k) of the Clean Water Act might not apply to local jurisdictions being permitted by a state with primacy. Although the proposed language does not provide protection to the extent adoption of the 402(k) language would, it is explicit and will inform the permit holders of new conditions with which they must comply.

The permit as a shield provision would provide permittees with appropriate compliance certainty. The Department should stand behind the permits it issues and permittees should be able to rely on their permit requirements. Some commenters may argue that DEQ does not have the resources necessary to issue comprehensive permits containing all compliance requirements. If this is so, DEQ should not be issuing NPDES permits at all. This rule is necessary to eliminate guesswork and uncertainty for permittees regarding compliance with applicable laws. The City strongly supports the proposed rule with the following comments.

Many, if not all, NPDES permits issued by DEQ contain the following provision in Schedule A:

Notwithstanding the effluent limitations established by this permit, no wastes shall be discharged and no activities shall be conducted which violate Water Quality Standards as adopted in OAR 340-41-xxx except in the defined mixing zones.

The Department has consistently stated that this paragraph is intended to address discharges of pollutants not addressed by the permit. Yet an interpretation of that paragraph can be argued to apply to parameters that have been assigned effluent limitations which were calculated to meet Water Quality Standards. Such an interpretation is inconsistent with the concept of a permit as a shield. Section 402(k) of the Clean Water Act is intended to provide permittees with certainty -- if they operate their facilities in accordance with the requirements of their permits, they are deemed to be in compliance with the Act and applicable State statutes and rules, with enumerated exceptions. EPA-issued permits, in fact, cannot be unilaterally modified during the term of the permit.

The rule proposed by the Department provides for unilateral permit modification by DEQ, so that, if necessary, the Department can incorporate into existing NPDES permits new or

Lydia Taylor  
Page 4  
July 1, 1992


revised Water Quality Standards or other requirements if they are promulgated during the term of a permit. Rather than creating an ambiguity in NPDES permits by including a "permit as a shield" provision where the potentially conflicting "[n]otwithstanding the effluent limitations established by this permit ..." provision is also contained in the permit, we suggest the following language as a substitute for that paragraph in order to eliminate the conflict and better express the intent of the Department:

Except in conformity with the effluent limitations established by this permit, no wastes that are not authorized by this permit shall be discharged and no activities that are not authorized by this permit shall be conducted which violates Water Quality Standards as adopted in OAR-41-xxx except in the defined mixing zones.

In any case, even without the "permit as a shield" provision, we urge you to revise the "[n]otwithstanding the effluent limitations established by this permit" language to more clearly and accurately express the intent of the Department.

In summary, the City supports the three proposed rules and, with our recommendations and requests for clarification noted, urges adoption by the EQC. As always, we look forward to working with you, your staff and the EQC to protect the water quality of our State.

Sincerely,



Cathryn Collis  
Intergovernmental Programs Manager

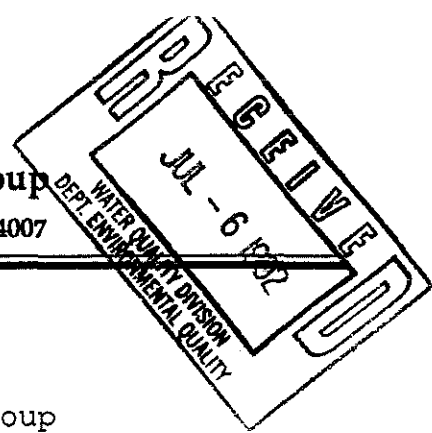
# OSPIRG

The Oregon State Public Interest Research Group

1536 SE 11th

Portland, Oregon 97214

(503) 231-4181, FAX: (503) 231-4007



Comments of Quincy Sugarman  
Oregon State Public Interest Research Group  
in opposition to  
the proposed inclusion of "permit as a shield" language  
in state-issued water quality permits  
June 30, 1992

Thank you for the opportunity to comment. My name is Quincy Sugarman, and I am an environmental advocate for the Oregon State Public Interest Research Group. OSPIRG is a statewide consumer and environmental research and advocacy organization with 35,000 members. OSPIRG opposes the proposed "permit as a shield" requirement.

## Do Not Lower Oregon Standards

While the federal Water Pollution Control Act (the Clean Water Act) allows language in permits to protect permittees from violations of water quality rules or regulations not included in the permit, it does not require this language to be inserted in permits. Existing standard language in Department of Environmental Quality (DEQ)-issued water quality permits clearly states that a "permit does not relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law, rule, standard, ordinance, order, judgment or decree."

Oregon developed this language to protect Oregon's water quality. States have the authority to be more stringent than the federal government in protecting the environment. Through the existing provisions, the state puts the burden on the potential polluter to be aware of environmental regulations that could be violated. Polluters should be accountable for all the consequences of pollution, including being aware of all relevant laws.

## "Permit as a Shield" Does Not Improve or Protect Environmental Quality

Oregon's existing language requires potential polluters to be aware of all possible standards, rules or laws regarding pollution prevention and management. It requires the users and emitters of toxic chemicals to be responsible for the consequences of that use. Oregon has a high quality environment. Any deviation from the current policy on permits not being shields would undermine the ability the state to preserve and protect its air, water and land quality.

## Burdens Should be on Polluters -- Not State Agency

While the DEQ may desire to be responsive to the needs of the regulated community, it is important to put this goal in



perspective with the DEQ's mission. The agency's responsibility is protection of environment and public health and welfare. The additional burden of requiring the agency to list all relevant water quality standards should not be on the agency. The additional work and evaluation necessary should be on the permittees. These permittees are the potential polluters and should bear the full costs of that possibility.

Because the proposed addition of "permit as a shield" language take a step away from the DEQ's role of protecting public health and the environment, we oppose this proposal.

## Sorenson Law Office

C. Peter Sorenson & Associates

Lane Building, Suite 303  
P.O. Box 10836  
Eugene, OR 97440  
(503) 683-1378

July 1, 1992, 4:45 p.m. via FAX

Oregon Department of Environmental Quality  
Water Quality Division (South)  
811 SW 6th Avenue  
Portland, OR 97204

Re: Proposed "Permit As A Shield" Amendment

Dear Mr. or Ms.:

We, the undersigned, are adamantly opposed to the proposed amendment to the Water Quality Permit rules that would include "permit as a shield" language in State-issued NPDES and WPCF permits. This change would be bad public policy, detrimental to both the people and the environment of the State of Oregon.

"Permit as a shield" language is merely "allowed," not mandated, by the Federal Water Pollution Control Act. We urge you to retain the existing language that makes clear that permits do not act as a shield. This affords the greatest measure of protection to our already-overburdened natural resources. To do otherwise would be to allow a permittee to violate with impunity any water quality limit, standard, or requirement that was not included in its permit. Such reliance on the assumption that an all-encompassing, airtight permit, incorporating any and all relevant rules and regulations, will in all instances be drafted and issued is grievously misplaced. A permit holder should be responsible for not merely referring to the permit alone for guidance, but should be cognizant of all other protective measures which may apply to the facility. To require any less would pose great risk to the receiving waters of the State, and would be a significant weakening of our current approach. Such backsliding should be rejected outright.

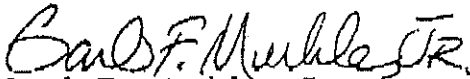
The Department can offer no guarantee or reasonable assurance that all relevant water quality rules will be included in each and every permit. The supposed "increased emphasis on enforcement of permits" is no justification for this proposed weakening of existing rules. We question whether there is in reality any such "increased emphasis." If there is, it seems to have manifested itself only in an abundance of Consent Agreements and SFOs that merely ratify the continuing violation of a permit or standard for years on end, with no financial penalties involved. Even in those rare cases where penalties have been enforced, it is our experience that they are woefully minuscule in relation to the magnitude of the harm inflicted and in comparison to those of other states.

Oregon Department of Environmental Quality  
July 1, 1992  
Page 2


Similarly, the "increased potential for lawsuits for NPDES permit holders" can in no way mitigate or justify the amendment. Such lawsuits are in fact few and are not undertaken frivolously. Most importantly, as anyone familiar with the law and procedure is fully aware, it is very difficult for plaintiffs to prevail on these suits. We fail to see the need to further hinder the enforcement of our already much-flouted environmental laws.

The current language is fair, appropriate and sensible: a permit should not "relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law, rule, standard, ordinance, order, judgment, or decree." To change this rule would gut an important protective measure upon which Oregonians rely, and further imperil the priceless natural environment they rightfully treasure.

Very truly yours,



Carl F. Merkle, Jr.  
Attorney at Law



C. Peter Sorenson  
Attorney at Law



William C. Carpenter, Jr.  
Attorney at Law

**SORENSON LAW OFFICE**

Attorneys at Law  
P.O. Box 10836  
Eugene, Oregon 97440  
Phone Number: (503)683-1378

UPS & FED EX ADDRESS:  
474 Willamette Street  
Suite 303  
Eugene, Oregon 97401

Fax Machine No. (503)683-1346

TO: JOSEPH M. EDNEY

OF: ODEQ, WATER QUALITY DIVISION (SOUTH) 1-229-6124

FROM: CARL F. MERKLE, JR.

OF: SORENSON LAW OFFICE

Number of Pages (excluding cover sheet) 2

MEMO: "PERMIT AS A SHIELD" COMMENTS

---



---



---



---



---



---



---



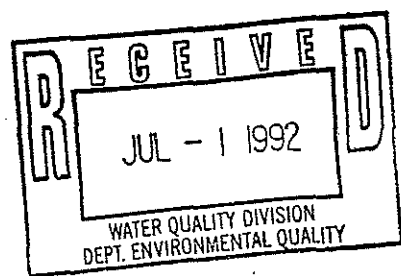
---



---



---



LAW OFFICES OF  
**JOHNSON & KLOOS**

FILE

ALLEN L. JOHNSON  
BILL KLOOS

767 WILLAMETTE STREET, SUITE 203  
EUGENE, OREGON 97401-2954

AREA CODE 503  
TELEPHONE 687-1004  
FAX 687-1021

July 1, 1992

~~Mr. Tom Lucas~~  
Department of Environmental Quality  
Water Quality Division  
811 SW 6th Avenue  
Portland, OR 97204

FAXED  
7-1-92

Joe Edney ←

FAXED  
7-7-92

Dear Mr. Lucas:

These comments are submitted on behalf of our clients, the Lower McKenzie Water Quality Project. Our clients are area residents participating in the renewal of an NPDES permit held by the Weyerhaeuser Paper Company paper mill in Springfield, Oregon. We believe that adoption of the proposed rule may affect our clients, as well as have a significant impact on the protection of the State's waters in general.

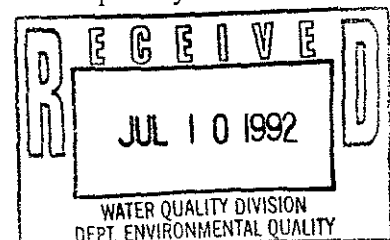
**Comments to the Proposed Rule**

We oppose the proposed rule that purports to make National Pollutant Discharge Elimination System (NPDES) permits issued by the State of Oregon a "shield" that will protect polluters "from violations of water quality rules or regulations not included in the permit."

The proposed rule is unnecessary. It will turn the discharge of pollutants into the waters of the State into a right, rather than a privilege granted to those who demonstrate that they are polluting as little as they can, without harm to human health and the environment, and in compliance with all relevant law.

The proposed rule will place a costly administrative burden on the State in issuing permits.

We believe that the proposed rule cannot shield a polluter from enforcement action for discharging a pollutant not listed in the permit. However, a contrary interpretation of the rule is possible. We request that the EQC make clear its interpretation of the rule in regard to whether it would shield a polluter from enforcement action for discharging a pollutant not listed in the permit. If so, the proposed rule will gravely hamper State and citizen enforcement actions intended to stop harmful discharges of pollutants should the State issue a permit that fails to cover a pollutant. Even if not so, the proposed rule will gravely hamper enforcement actions intended to stop harmful discharges of pollutants should the the State issue a permit that inadequately covers a pollutant.



Mr. Tom Lucas  
July 1, 1992  
Page 2

1. The State of Oregon need not make NPDES permits it issues a shield that will protect polluters from violations of water quality rules or regulations not included in the permit. Section 510 of the Clean Water Act makes it clear that "any State" is free to "adopt or enforce any standard or limitation respecting discharges of pollutants" that are more stringent than those contained in federal law.

2. Adopting the "permit as a shield" rule will turn the discharge of pollutants into the waters of the State of Oregon into a right, rather than a privilege. Discharging pollutants into waters of the State is a serious matter. These waters contain fragile ecosystems. Public health and the State's economy largely depend on maintaining the integrity of our State's waters. For these reasons, anyone requesting permission to discharge pollutants into our State's waterways must prove that they will discharge as little pollution as possible and do so without harm to public health and the environment.

Furthermore, polluters must also prove that their discharge of pollutants complies with all relevant law. Under this scheme, the discharge of pollutants is a privilege that must be earned. Adopting the "permit as shield" rule will shift this burden of proof and require DEQ to insure that the polluter is discharging as little as possible, without harm to human health and the environment, and in compliance with all relevant law. Under the proposed rule, the discharge of pollutants will become a right subject only to the State's limited ability to discover what the polluter must do to minimize pollution discharges, avoid any harm to human health and the environment, and comply with all relevant law.

3. The proposed rule will greatly increase the cost of issuing permits. Because DEQ will be forced to issue perfect NPDES permits, and the burden will no longer be on the polluter to insure that permits are adequate, DEQ will have to devote substantially more resources to issuing permits. DEQ states that under the proposed rule it would need to "make the extra effort to insure that all relevant water quality rules be included in the permit."

4. The proposed rule needs to be clarified as to whether it would shield a polluter from enforcement action for discharging a pollutant not listed in the permit. We believe that it could not because section 402(k) of the Clean Water Act, which the proposed rule purports to adopt as Oregon law, does not. However, a contrary interpretation of the rule is possible. The Commission should make its interpretation of the proposed rule explicit.

5. If the proposed rule would shield a polluter from enforcement action for discharging a pollutant not listed in the permit, the proposed rule will severely hamper the State's and the public's ability to take actions to stop the discharge of harmful pollutants not covered by a permit. Under the proposed rule, if DEQ does not issue a

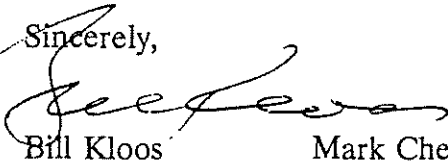
Mr. Tom Lucas  
July 1, 1992  
Page 3

permit that covers every conceivable pollutant, which it must, the State and its citizens will be left with no efficient mechanism to stop the discharge of a pollutant that was left out of the permit. Citizen's suits and State enforcement under the Clean Water Act would be barred because compliance with the incomplete permit would be compliance with all provisions of the Clean Water Act. This may be so even if a polluter's actions were the cause of the incomplete permit. The only procedure that may remain to remedy the incomplete permit and stop harmful discharges would be costly and time-consuming administrative proceedings to modify, revoke, or terminate the permit.

6. Even if the proposed rule would not shield a polluter from enforcement action for discharging a pollutant not listed in the permit, the proposed rule would still seriously hamper the State's and the public's ability to quickly take actions to stop the discharge of harmful pollutants inadequately covered a NPDES permit. Under the proposed rule, if DEQ does not issue a permit that applies all relevant law and includes the lowest limit for a pollutant required by all relevant law, which it must, the State and its citizens will be left with no efficient mechanism to stop the discharge of a pollutant that was inadequately covered by the permit. This would be so even if the polluter's actions were the cause of the inadequate permit.

We request time to present these objections to the proposed rule at the July 23 meeting of the Commission.

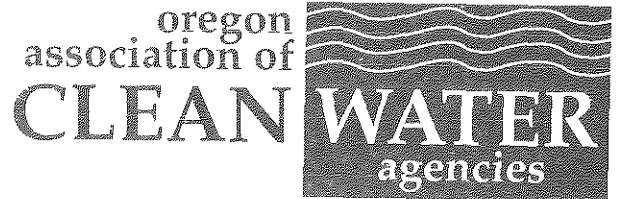
Sincerely,



Bill Kloos

Mark Chernaik

cc: Reed, client  
Ungerleider, client



July 21, 1992

William W. Wessinger, Chair  
Environmental Quality Commission  
811 S.W. 6th Avenue  
Portland, OR 97204

Dear Chair Wessinger and Commission Members;

Thank you for the opportunity to address the Commission. As a representative of the Oregon Association of Clean Water Agencies, I am here today to support the proposed rule changes and to provide some technical information to demonstrate that these proposals are sound public policy.

●In our view, mass limits duplicate the effect of other permit limits with no added water quality benefit except for water quality limited streams.

●New data demonstrates that implementation of the enterococci bacteria standard as an end of the pipe limit is premature at this time and may have important negative environmental impacts.

●Having all pertinent regulatory requirements in permits will in the long run improve water quality and is the most efficient way for State and local governments to operate.

### Mass Limits

Environmental protection is our business. I want to assure you that ACWA members have sought changes to permit conditions especially with regard to mass limits not because we desire to increase discharges but rather because we view mass limits as redundant and unnecessary regulation. While we continue to disagree about the need for mass limits in municipal

ACWA MAILING ADDRESS  
P.O. Box 8434  
Portland, Oregon 97207

ACWA OFFICERS  
Chair  
Terry Smith, 687-5289  
Vice Chair  
Garry Oit, 689-2438  
Secretary/Treasurer  
Bob Elmstad, 796-7266

### ACWA MEMBER AGENCIES

Albany  
Arch Cape Service District,  
Arch Cape  
Ashland  
Bear Creek Sanitary Authority,  
Medford  
Canby  
Cannon Beach  
Charleston Sanitary District,  
Charleston  
Clackamas County Department  
of Utilities  
Coos Bay  
Corvallis  
Dallas  
Douglas County Public Works,  
Roseburg  
Eugene  
Grants Pass  
Green Sanitary District, Roseburg  
Gresham  
Hermiston  
Irrigon  
Joseph  
Klamath Falls  
La Grande  
Lebanon  
Medford  
Metropolitan Wastewater  
Management Commission,  
Springfield  
Molalla  
Myrtle Creek  
Newberg  
North Bend  
Oak Lodge Sanitary District,  
Milwaukie  
Oregon Water Wonderland Unit II  
Sanitary District, Bend  
Pacific City Sanitary District  
Philomath  
Portland  
Redwood Sewer Service District,  
Grants Pass  
Roseburg Urban Sanitary Authority  
Salem  
Sandy  
Seaside  
Shady Cove  
South Suburban Sanitary District,  
Klamath Falls  
St. Helens  
The Dalles  
Tillamook  
Tri City Sanitary District,  
Myrtle Creek  
Troutdale  
Twin Rocks Sanitary District,  
Rockaway Beach  
Unified Sewerage Agency  
Wilsonville  
Woodburn  
(555) 3333/JSK/103773.1)





William W. Wessinger, Chair  
July 21, 1992  
Page 2

permits, our members are willing to accept the proposed rule as a compromise.

It is important that you understand why we support the proposed rule and believe that it will not result in any significant increase in pollutant loads. Municipal permits include not only mass limits but also concentration limits and a requirement that a minimum removal efficiency be achieved - usually 85 percent - on a monthly basis. The 85 percent removal requirement is Federally imposed. All of the problems that mass limits are designed to prevent - high peak flows due to inflow, poor operation, inadequate maintenance - are prevented by the 85 percent removal requirement. Typical permits in Oregon have a 30 mg./L permit limit for TSS and BOD during the winter. Influent concentrations can be 100 mg./L or lower during high flow periods. To achieve 85 percent removal with an influent strength of 100 mg./L, effluent quality must exceed 15 mg./L. This level of performance can not be achieved without careful operation of a well maintained system. It is possible to slightly exceed current daily mass limits once in a month without exceeding the 85 percent removal requirement. These small exceedances have no water quality impact. It is impossible to have a significant exceedance of mass limits and comply with the 85 percent removal requirement.

Increased pollutant discharges from existing treatment plants will not occur without facility expansions. All current mass load discharges are limited by the treatment and hydraulic capacity of current facilities. If either treatment capacity or hydraulic capacity is exceeded either a concentration limit will be violated or unpermitted bypasses will occur. The Department must approve any facility expansion. This provides another check on increased discharges.

### **Enterococci Bacteria Standard**

ACWA members do not oppose the adoption of better indicators of human health impacts of discharges. We do support the proposed rule change to suspend the implementation of enterococci as the bacteria standard because we do not feel that the full implications of this standard are known. It appears that Oregon plants may have an especially resistant form of enterococci that requires very high concentrations of chlorine to disinfect (see attached charts). We have begun a cooperative research program among 14 agencies to understand this problem and find solutions. So far we have several months of sampling data from 8 treatment plants. We find that 31 percent of the daily tests exceed the current daily standard of 61 per 100 mL and that 43 percent of the monthly geometric means exceed the monthly standard of 33 per 100 mL. Winter time compliance is even more problematic - over half of the monthly geometric means exceeded the standard. Some

William W. Wessinger, Chair  
July 21, 1992  
Page 3

plants have experimented with substantially increased chlorine concentrations and find that they still can not reliably achieve the standard.

The increased chlorine concentrations that will be required to achieve the current standard will have several environmental effects. In addition to the increased risk of accidental chlorine release, the production of dissolved solids and of trihalo methanes - carcinogenic compounds - will increase.

At ACWA's recent Annual Conference, EPA microbiologists were surprised by the difficulty we are experiencing and have agreed to participate in the cooperative research effort. In addition, we learned that EPA has a draft Disinfection Policy that will provide more complete guidance on the development of bacteria standards. Specifically, the document recommends that standards be based on risk tolerance and the trade offs in risk between protection for swimmers' health and the impacts of increased use of chlorine. EPA supports the application of the bacteria standards at the edge of the mixing zone and not at the end of the pipe.

EPA has recommended that instead of reinstating the old fecal standard, the Commission adopt an E. coli standard to be applied at the edge of the mixing zone. ACWA has only limited data about the ability of plants to comply with an E. coli standard. We suspect that current disinfection facilities can meet an E. coli standard and protect public health but we would prefer to have adequate data before proceeding with another standard. In addition, more information is needed to address chlorine usage problems and risk tolerance before a new standard can be adopted. We therefore support returning to the fecal coliform standard as an interim measure.

#### 402(k) Permit Provisions

Municipal permits issued by the Department extensively regulate discharges and plant operations. Therefore, adoption of the proposed "Effect Of A Permit" language will not shield permittees from having to protect the environment. In addition, the language continues required compliance with 307 toxics regulations. Last, but not least, all major municipal permittees have either already conducted or will be required to conduct whole effluent toxicity tests to determine if an unknown pollutant is harming aquatic life.

To the maximum extent possible, local governments would prefer the Department to continue to write permits that contain all significant requirements because local governments rely heavily on those permits for the operation of their facilities. As a



William W. Wessinger, Chair  
July 21, 1992  
Page 4

practical matter, local governments can make better decisions if permits fully disclose regulatory requirements. The discussion that goes on between Department staff and a municipal permittee during permit renewal is educational for both parties. Without full disclosure, those discussions are less likely to be complete. If a change in permit conditions is needed for any reason, the Department and the Commission will still have the authority to amend a permit at any time. Local governments have accepted and will continue to accept new regulatory requirements that are needed to protect the environment. We will continue to have concerns about cost effectiveness and priorities as we access new requirements.

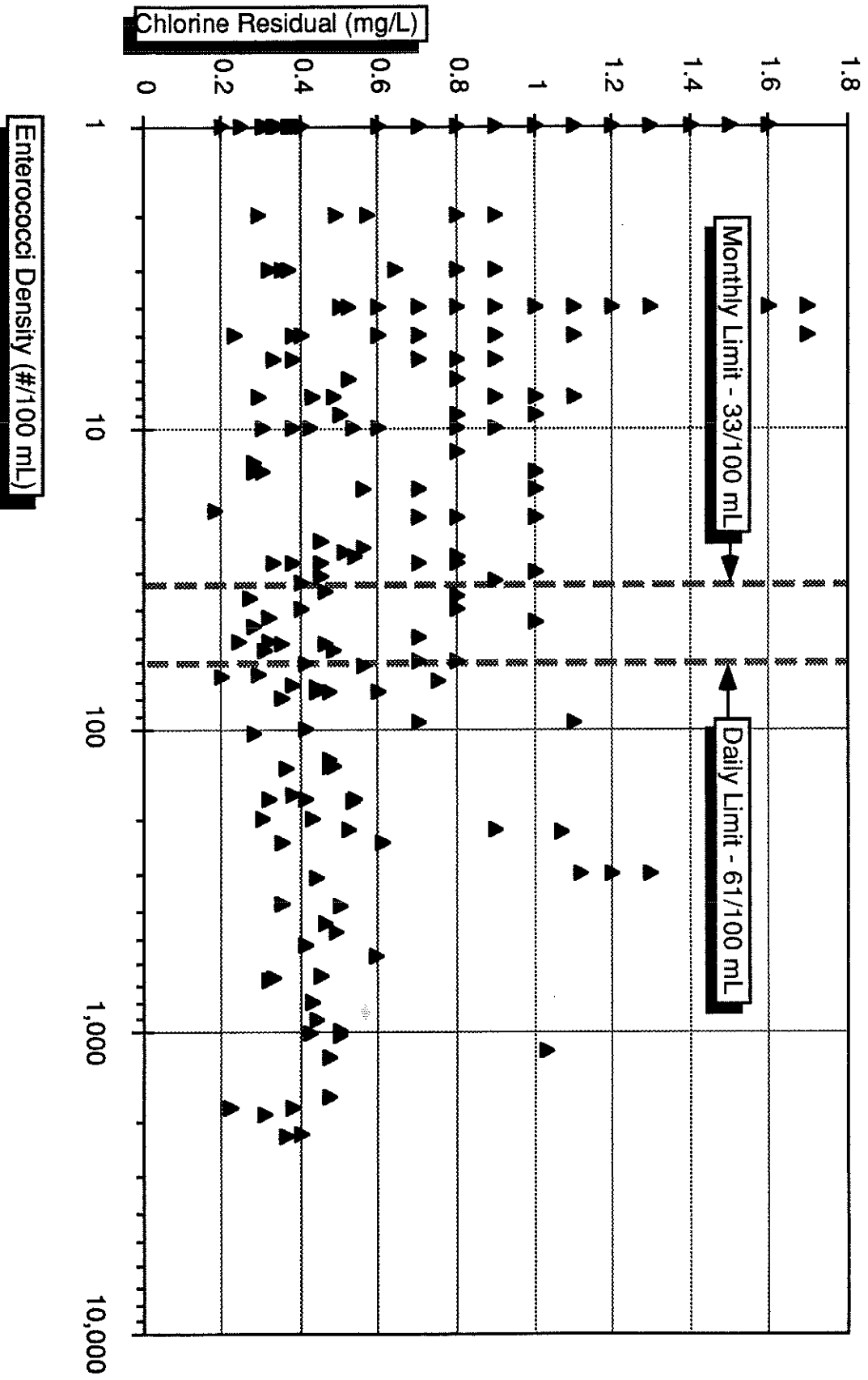
ACWA is thankful for the dedication and hard work displayed by the Department's staff on these matters. As public servants, we have a deep respect for this dedication even if we may have differences of opinion on occasion.

Again, thank you for this opportunity to discuss these important matters with you.

Sincerely,

Terry Smith

# Enterococci Density vs. Chlorine Residual Concentration





Office of the Mayor  
501 SW Madison  
P.O. Box 1083  
Corvallis, OR 97339-1083  
(503) 757-6985  
FAX (503) 757-6936

July 23, 1992

William W. Wessinger, Chair  
Environmental Quality Commission  
811 S.W. Sixth Avenue  
Portland, OR 97204

Dear Chair Wessinger and Commission Members;

Thank you for the opportunity to speak in support of the rule changes recommended by DEQ staff. These rule changes involve mass limits, bacteria standards, and "permit as a shield".

At the outset, let me state the obvious. Oregon municipalities rely heavily on the terms of their discharge permits in making decisions. Local governments incur substantial capital and operating expenditures to improve water quality in accordance with permit conditions; they seek to avoid permit violations if at all possible. Oregonians willingly support environmental protection if expenditures are cost-effective and regulations are appropriate, equitable and produce good results.

As the Mayor of a medium-sized Oregon city, I want to describe why these proposals are needed and are important to us.

1. Winter mass limits, if unamended, will impose high costs on Oregon residents with no appreciable water quality benefits.
2. The enterococci standard, if unamended, will require the use of large amounts of chlorine which will be environmentally detrimental.
3. Municipal NPDES permits should be comprehensive, but municipalities must be able to rely on explicit permit conditions to plan and operate their sewerage treatment facilities appropriately.

I discuss each proposed rule briefly below.

### **MASS LIMITS**

Currently, NPDES permits for municipalities regulate the two conventional pollutants - suspended solids and biochemical oxygen demand - in three different ways: concentration limits, mass limits, and removal efficiency. Any two of these alternatives are sufficient to protect water quality.

WILLIAM W. WESSINGER, CHAIR  
ENVIRONMENTAL QUALITY COMMISSION  
JULY 23, 1992  
PAGE 2

As a consequence of the approach that has been used to calculate municipal discharge limits, municipalities occasionally violate mass limits as a result of random events such as heavy rainfall, without a significant water quality impact. The irony is that when these violations occur, municipalities are commonly discharging higher quality water than is flowing in the receiving stream. Subjecting municipalities to permit violations under these conditions is not reasonable public policy.

The proposed rule, while representing a compromise, eliminates most difficulties local governments have had with mass limits. Therefore, we support the proposed rule.

### **ENTEROCOCCI**

Adoption of enterococci as the bacteria standard would require large increases in chlorine use. Studies at the Corvallis treatment plant show we cannot reliably meet the current standard even with a four-fold increase in chlorine use. No one has yet evaluated the environmental impact of such a massive increase in chlorine use. But, as you know, carcinogenic compounds can be produced when chlorine is mixed with organic matter in water.

The proposed enterococcus rule provides a finite time period for scientific information to be gathered and evaluated. This will ensure that an appropriate standard will eventually be selected. Therefore, we support the proposed rule.

### **PERMIT AS A SHIELD**

As I noted earlier, local governments rely heavily on their NPDES permit to guide their decision making and treatment plant operations. By focusing local government's attention on those regulations that are important for protecting water quality, the proposed rule will result in improved water quality in the long run.

The proposed rule will protect the environment while providing appropriate, effective guidance to municipalities. Therefore, we support the proposed rule.

### **CLOSING**

Thank you for this opportunity to comment. Let me assure you that municipalities and local governments support you in your efforts to improve water quality in Oregon.

Sincerely,



R. Charles Vars, Jr  
Mayor