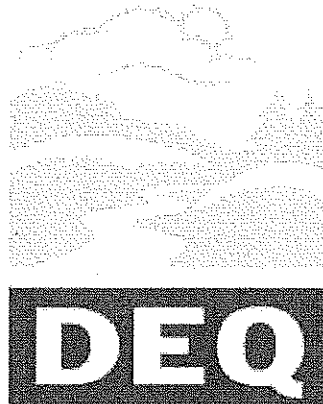


3/14/1986

**OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS**



State of Oregon
**Department of
Environmental
Quality**

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OREGON ENVIRONMENTAL QUALITY COMMISSION MEETING

March 14, 1986

Room 1400
522 S.W. Fifth Avenue
Portland, Oregon

TENTATIVE AGENDA

10:30 a.m. CONSENT ITEMS

These routine items are usually acted on without public discussion. If any item is of special interest to the Commission or sufficient need for public comment is indicated, the Chairman may hold any item over for discussion.

- A. Minutes of January 31, 1986, regular meeting and February 7, 1986 special meeting.
- B. Monthly Activity Report for December, 1985 and January, 1986.
- C. Tax Credits.

10:40 a.m. PUBLIC FORUM

This is an opportunity for citizens to speak to the Commission on environmental issues and concerns not a part of this scheduled meeting. The Commission may discontinue this forum after a reasonable time if an exceptionally large number of speakers wish to appear.

HEARING AUTHORIZATIONS

- D. Request for authorization to conduct public hearing on revisions to OAR 340, Division 30, Specific Air Pollution Control Rules for the Medford-Ashland Air Quality Maintenance Area as an amendment of the State Implementation Plan.
- E. Request for Authorization to Hold a Public Hearing on the Construction Grant Management System and Priority List for FY87.
- F. Request for Authorization to Conduct Public Hearings on Proposed Rules to Establish Chapter 340, Division 120, Siting and Permitting Requirements for Hazardous Waste and PCB Treatment and Disposal Facilities, and to Amend Division 110, Management of PCBs.

ACTION AND INFORMATION ITEMS

Public testimony will be accepted on the following, except items for which a public hearing has previously been held. Testimony will not be taken on items marked with an asterisk (*). However, the Commission may choose to question interested parties present at the meeting.

- G. Proposed adoption of rule changes which would allow regional air pollution authorities to set a permit fee schedule for sources within their jurisdiction.

- H. Proposed Adoption of Standards for Nuisance Phytoplankton Growth.
- I. City of Klamath Falls Petition for 401 Certification Rules Amendment.
- J. Review of Siting Criteria to be used for Selection of a Landfill Site for the Portland Metropolitan Area, as Authorized by SB 662.

WORK SESSION

The Commission reserves this time, if needed, for further consideration of any item on the agenda.

Because of the uncertain length of time needed, the Commission may deal with any item at any time in the meeting except those set for a specific time. Anyone wishing to be heard on any item not having a set time should arrive at 10:30 am to avoid missing any item of interest.

The Commission will not hold a breakfast meeting. The Commission will lunch at the DEQ Offices, 522 S.W. Fifth Avenue, Portland.

The next Commission meeting will be April 25, 1986 in Portland.

Copies of the staff reports on the agenda items are available by contacting the Director's Office of the Department of Environmental Quality, PO Box 1760, Portland, Oregon 97207, phone 229-5395, or toll-free 1-800-452-4011. Please specify the agenda item letter when requesting.

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EQC.AG (5/83)

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MINUTES OF THE ONE HUNDRED SEVENTIETH MEETING

OF THE

OREGON ENVIRONMENTAL QUALITY COMMISSION

March 14, 1986

On Friday, March 14, 1986, the one hundred seventieth meeting of the Oregon Environmental Quality Commission convened in room 1400 of the Department of Environmental Quality offices, 522 S. W. Fifth Avenue in Portland, Oregon. Present were Commission Chairman James Petersen, Vice Chairman Arno Denecke and Commission members Mary Bishop, Wallace Brill and Sonia Buist. Present on behalf of the Department were its Director, Fred Hansen, and several members of the Department staff.

The staff reports presented at this meeting which contain the Director's recommendations mentioned in these minutes, are on file in the Office of the Director of the Department of Environmental Quality, 522 S. W. Fifth Avenue, Portland, Oregon. Written information submitted at this meeting is hereby made a part of this record and is on file at the above address.

The Commission did not hold a breakfast meeting.

FORMAL MEETING

Chairman Petersen gave the rest of the Commission an update on the noise situation at Portland International Airport. Chairman Petersen, a pilot, has been working with the Port of Portland and the Department to help resolve noise complaints from residents of the Hayden Island area. The current Standard Instrument Departure (SID) requires pilots taking a westerly departure to direct their aircraft over the center of the Interstate Bridge. Chairman Petersen said that all kinds of problems have kept pilots from consistently following the SID, and he just learned that the regional Federal Aeronautic Administration (FAA) office would not change the SID. Chairman Petersen has asked for a letter from the FAA with an explanation. Chairman Petersen said he flew the SID in a small plane. He discovered the turn was actually farther south than he had anticipated. John Newell of the Port of Portland will continue to explore the most optimum way to avoid noise impacts on Hayden Island, but it would be difficult to do as it could impact areas in Vancouver, Washington.

AGENDA ITEM A: Minutes of the January 31, 1986 regular meeting, and February 7, 1986 special meeting

It was MOVED by Commissioner Bishop, and seconded by Commissioner Brill that the minutes be approved. The motion passed unanimously with Commissioner Buist abstaining for the January 31, 1986 minutes as she was not in attendance at that meeting.

AGENDA ITEM B: Monthly Activity Report for December, 1985
and January 1986

It was MOVED by Commissioner Denecke, seconded by Commissioner Buist and passed unanimously that the Monthly Activity Report be approved.

AGENDA ITEM C: Tax Credit Applications

Director's Recommendation

It is recommended that the Commission take the following action:

1. Issue tax credit certificates for facilities subject to old tax credit laws:

<u>Appl.</u>	<u>Applicant</u>	<u>Facility</u>
T-1696	Oregon Cherry Growers, Inc.	Wastewater Pre-treatment System
T-1781	Teledyne Industries, Inc.	Aqueous Ammonia Storage Facility
T-1784	Teledyne Industries, Inc.	Bag Filter Dust Collection System and Containment Area with Sump Pump
T-1798	Hanna Nickel Smelting Co.	Dust Collection and Venturi Scrubber System
T-1799	Graphic Arts Center, Inc.	Vapor Incineration
T-1814	Boise Cascade Corporation	Silencers for No. 8 Recovery Boiler

2. Issue tax credit certificates for facilities subject to the old tax credit laws:

T-1748	Roseburg Forest Products, Inc.	Baghouse
T-1788	Davidson Leasing	Propane Flamer

It was MOVED by Commissioner Denecke, seconded by Commissioner Bishop and passed unanimously that the Director's Recommendation be approved.

PUBLIC FORUM

William Putney, Clayton-Ward Company, Salem, Oregon, testified regarding the Marion County Wasteshed Report required by Oregon's Opportunity to Recycle Act (SB 405). He asked that the Commission instruct the Department to send the report back to Marion County as unacceptable. Mr. Putney explained that the Marion County report also included the City of Salem and he did not think the City was committed to the recycling effort. Mr.

Putney said the City openly causes recyclable material to be deposited in the landfill violating the spirit and intent of SB405. He said it was the City's attitude that if recyclables are taken out of the wastestream then the garbage haulers will have to charge more for collection.

In response to Commissioner Buist, Director Hansen said the Marion County report was presented at the Commission's September meeting. Lorie Parker of the Department's Hazardous and Solid Waste Division, explained that the law did not require the Commission to review recycling reports except in the instance where there may be deficiencies in the report that the Department has been unsuccessful in getting resolved.

Chairman Petersen asked where citizen review of the report would come. Ms. Parker replied that each watershed is required to hold public hearings on their draft report before it is submitted and that any comments received be transmitted to the Department. The Department has a transcript of Mr. Putney's testimony at the hearing which was held on the Marion County report.

Commissioner Brill asked how many people in the Marion County watershed were involved in garbage collection. Mr. Putney said that there was one large company within the City and about eight smaller companies which also overlap into the County.

Commissioner Denecke said that as a resident of Salem he was familiar with Mr. Putney's business and with garbage collection in the area. He asked that the Department inform him when it was ready to act on the report.

AGENDA ITEM D: Request for Authorization to Conduct a Public hearing on Revisions to OAR Chapter 340, Division 30, Specific Air Pollution Control Rules for the Medford-Ashland Air Quality Maintenance Area concerning Source Testing Requirements as an Amendment of the State Implementation Plan

Oregon Administrative Rules (OAR), Chapter 340, Division 30, Specific Air Pollution Control Rules for the Medford-Ashland Air Quality Maintenance Area (AQMA) were adopted April 7, 1978. Parts of these rules address particulate matter emission limits for specific sources, including woodwaste boilers and charcoal plants. These sources are required to conduct annual source tests to quantify particulate as emitted in discharge gases. For woodwaste boilers and charcoal plants, the rule requires additional quarterly tests subsequent to an emission limit exceedance as demonstrated by the annual source test. The average of all tests is used to demonstrate compliance. Quarterly testing and this averaging aspect of the requirement creates problems for the Department and industry and does not help in the process to achieve and demonstrate compliance. Deleting quarterly testing, while requiring expeditious corrective action subsequent to an annual source test failure, would more readily aid in the objective of achieving compliance.

Director's Recommendation

Based on the summation in the staff report, it is recommended that the Commission authorize a public hearing to consider amending the State Implementation Plan regarding source testing in the Medford-Ashland AQMA. The proposed amendments would omit from the testing regulation the requirement to conduct quarterly source testing on large woodwaste boilers, and charcoal plants subsequent to an emission limit exceedance on an annual test.

Commissioner Buist asked how much variation there was around the average mean. Lloyd Kostow, of the Department's Air Quality Division, replied that there were five sources which would be affected by the rule. Four have been under the standard, one has been slightly over the .05 grains per dry standard cubic foot standard, and the way the rule is presently worded that is not a violation. Commissioner Buist asked how much variation was there from day to day on an individual source. Mr. Kostow replied that source tests tell only the conditions at the time the test is run. However field inspectors do drive-by opacity checks and investigate complaints.

It was MOVED by Commissioner Buist, seconded by Commissioner Bishop and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM E: Request for Authorization to Hold Public Hearing on the Construction Grant Management System and Priority List for FY87

This requests authorization to conduct a public hearing on April 23, 1986 to hear testimony regarding the draft priority list to be distributed to interested persons on March 20. Public testimony is also being solicited concerning a proposed Administrative Rule Amendment which would authorize the Director to set aside 20 percent of the grant funds allocated to the state in any year to capitalize a state revolving loan fund. A priority list must be adopted annually for the State to continue to certify federal construction grant funds for sewage projects.

Director's Recommendation

Based on the summation in the staff report, the Director recommends that the Commission authorize a public hearing to solicit public comment on the FY87 priority list and a proposed amendment regarding the establishment of up to a 20 percent reserve to aid in capitalizing a state revolving fund. The hearing will be held April 23, 1986. All testimony entered into the record by 5:00 pm on April 25, 1986 will be considered by the Commission.

It was MOVED by Commissioner Buist, seconded by Commissioner Bishop and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM F: Request for Authorization to Conduct Public Hearings on Proposed Rules to Establish OAR Chapter 340, Division 120 Siting and Permitting Requirements for Hazardous Waste and Polychlorinated Biphenyl (PCB) Treatment and Disposal Facilities, and to Amend Division 110, Management of PCB

Following Chem Security System Inc.'s request to build a polychlorinated biphenyl (PCB) incinerator at its Arlington hazardous waste disposal site, the 1985 Legislature enacted Senate Bill 138 to govern the siting and permitting of all hazardous waste and PCB treatment and disposal facilities. The Act requires the Commission to adopt implementing rules by the end of April, 1986.

Director's Recommendation

Based upon the Summation in the staff report, it is recommended that the Commission authorize public hearings on the proposed rules establishing siting and permitting requirements for hazardous waste and PCB treatment and disposal facilities (Division 120), and amending existing rules for the management of PCBs (Division 110).

It was MOVED by Commission Buist, seconded by Commissioner Brill and passed unanimously that the Director's Recommendation be approved.

Director Hansen complimented the SB 138 Citizen's Advisory Committee for their efforts in this matter.

COMMENTS ON REQUESTS FOR HEARING AUTHORIZATION

Commissioner Denecke commented that the Commissioners spend a lot of time reading hearing authorization staff reports. He asked if the Commission was required to go through the hearing authorization procedure. Chairman Petersen said he could not remember a time when a public hearing was not authorized. Chairman Petersen said he appreciated knowing on controversial issues the direction proposed rules will take and he uses that as a benchmark when rules come back to the Commission for adoption.

Michael Huston, Assistant Attorney General, said there was no requirement that the Commission be consulted in advance of going to hearing. Many state boards are just sent a notice of the hearing by their respective departments. Mr. Huston said it was a long-standing tradition with the Department to request the Commission to authorize hearings, but there was no requirement.

Chairman Petersen asked the Department to examine this question and report back about the advisability of discontinuing the practice. He suggested this could be done at a breakfast or lunch meeting April 25. Director Hansen agreed to prepare the pros and cons of hearing authorizations and report back to the Commission.

AGENDA ITEM G: Proposed Adoption of Rule Changes Which would Allow
Regional Air Pollution Authorities to Set a Permit
Fee Schedule for Sources Within Their Jurisdiction

The Lane Regional Air Pollution Authority (LRAPA) made a request to the Department to amend state rules to allow regional air pollution authorities to establish separate permit fee amounts greater than those set by the Commission. The proposed rule change was requested as a possible strategy to raise revenues necessitated by reductions in funding from local sponsoring entities. At the November 22, 1985 meeting a public hearing on the proposed rule changes was authorized. The hearing was held in Springfield on January 15, 1986. No testimony opposing the rule changes was received.

Director's Recommendation

Based upon the summation in the staff report it is recommended that the Commission adopt the proposed rule change for OAR Chapter 340, Division 20, Section 165, as a revision to the State Implementation Plan. This rule change would allow regional air pollution authorities to adopt a permit fee table different from that of the Department.

Commissioner Buist asked what the difference was between LRAPA standards and state standards. Don Arkell, Director of the Lane Regional Air Pollution Authority, said their standards were the same or more restrictive than state standards and LRAPA has been using the state fee schedule.

Chairman Petersen said he still had reservations about LRAPA having a different fee schedule than the state. He understood the reason for the fee increase was primarily because of a reduction of revenues from the sponsoring entities. Mr. Arkell said that LRAPA was sponsored by four local entities and also received some revenue from DEQ and some federal funds. As a result of reduction of funds from two of the local entities LRAPA scaled back its program substantially but did not fall below the level of the state program. LRAPA has now recovered almost all of the reduction of revenues and were back up to the same level they were in 1980. The LRAPA board did an extensive study to reduce costs and stabilize revenue sources. Increasing of permit fees is one of their revenue raising strategies.

Commissioner Brill asked what determined the amount of revenue from each entity. Mr. Arkel said that they calculate what revenue is needed each year and then tell the local entities what is needed to balance the budget roughly calculated on a per capita basis. Approximately 40 percent of the operating budget comes from local jurisdictions.

Chairman Petersen was concerned that permit holders in Lane County were going to pay more for permits than others in the state. He asked if Lane County sources would be getting more or better service from LRAPA. Lloyd Kostow, of the Department's Air Quality Division, replied that LRAPA is able to provide a higher level of service than DEQ does elsewhere in the state.

In response to Chairman Petersen's concerns, Mr. Arkell read a letter the Department had received from the Lane Boiler Owners Association which stated support for the fee increase. Tom Donaca, Associated Oregon Industries agreed with the letter indicating support of Lane County industries.

It was MOVED by Commissioner Bishop, seconded by Commissioner Buist and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM H: Proposed Adoption of Nuisance Phytoplankton Growth Rule

At the last Commission meeting, a report and further testimony was received on a proposed Nuisance Phytoplankton Growth Rule. The Commission tabled action but gave the Department the following policy direction:

1. Eliminate a proposed nutrient rule from further consideration;
and
2. Reword the Nuisance Phytoplankton Rule to address concerns raised by the City of Portland and the Oregon Environmental Council.

Department staff met with those who testified or were represented at the January Commission meeting to gain input on the rewording. This agenda item contains the modified rule language and requests adoption of the rule OAR 340-41-150.

Director's Recommendation

Based on the summation in the staff report, it is recommended that the Commission adopt the Nuisance Phytoplankton Rule, OAR 340-41-150.

Cyndy Mackey and Helen Kennedy appeared on behalf of the Northwest Environmental Defense Center (NEDC). They presented a letter from NEDC which asked for the adoption of nutrient standards. They did not believe the rules as proposed complied with Section 303 of the Federal Clean Water Act as the rule did not prevent anticipated violations of water quality. Ms. Mackey said the rule contained economic and technical feasibility which was not required under Section 303. She said they wanted to see something done more quickly than studying the problem would accomplish.

Commissioner Buist asked if Section 303 prescribed the maximum amount of pollutants. Director Hansen said that was a point of debate. Michael Huston, Assistant Attorney General, said that the general legal framework established by Section 303 is an obligation for states to establish water quality standards for the protection of beneficial uses. He said Oregon went through that process and adopted administrative rules which have been approved by the Federal government. This is an area of considerable discretion for the agency, he continued. Nothing in Section 303 prescribes any form of standards dealing with nutrients. NEDC contends that the chlorophyll a standard has to be consistent with total maximum daily load (TMDL) limits. The staff position is that it is not a real standard.

In response to Chairman Petersen, Director Hansen said that EPA has said that the Department's approach meets their standards. He said Oregon has been fearful that having a maximum pollutant level would encourage maximum discharges to that level. The Department wants the proposed strategy to keep the pressure on point sources to be below the standards.

Ms. Kennedy said it was NEDC's position that the state must have some form of nutrient standards for water quality. She said it was a probability that there are already unacceptable chlorophyll a levels and in the end a total maximum daily load was going to be needed, so why not have those standards to begin with. She requested a nutrient standard which would keep users in compliance without having to go through a two-year study. Nitrogen and phosphorous have been studied for many years, Ms. Kennedy continued, and if continuous discharges are allowed even after the standard is exceeded the problem may be made worse. Ms. Kennedy recommended that if new discharges were to be allowed, then some sort of set nitrogen and phosphorous levels be adopted so staff could make a decision without coming before the Commission with each new discharge request.

Ms. Mackey disagreed with Director Hansen and Mr. Huston's interpretation of Section 303 saying it required the state to establish maximum daily loads. She said NEDC was willing to wait six months for such standards to be developed, but it should have been done already.

Commissioner Buist commented that it is not an ideal world and people must accept that the waters are not pristine. She said the Commission must balance the cost of getting absolute purity and the health effects of the deterioration of water quality. At some point, she continued, you have to say it is too expensive.

Ms. Kennedy said other states have these regulations and did not think that studying the problem further would help. She said the situation can be improved from where it is today and did not see the Department going in that direction.

Commissioner Buist was unable to attend the January EQC meeting, and asked for a summary of the Department's position. Director Hansen said the Department was saying that in any given water body there are potentially different sources of nutrients such as point sources, nonpoint sources and natural causes. The Department is uncertain at this stage the interplay of those potential causes. He said the Department did not believe that a standard which would impose strict limits on specific point sources was necessarily the way to clean up the problem. Mr. Hansen said there was language in the rules to ensure that a problem does not get worse during the study. Chairman Petersen said that adopting a standard without knowing the source of the problem was not responsible and might be extremely expensive for the source, which in the end might not be the problem.

Director Hansen said a portion of the rule requires that studies be conducted as necessary. The chlorophyll a standard will trigger this study. However, he said a major source of funding for these projects was in danger due to federal budget cuts necessitated by the Gramm-Rudman Act

and the Department will not be able to get to all potential study areas. However, the Tualatin River is clearly a top priority, he continued. The Department already has a person on staff working on that study and expects that effort to continue.

Mark Pilliod, City of Tualatin, stated they had had a very productive meeting with the staff after the Commission's January meeting and did not now have as significant concerns as they did in January. Mr. Pilliod said he was not sure the Commission was prepared to address a nuisance as defined by law. He suggested the term "undesirable" instead of nuisance.

In reference to 340-41-150(2) (a) Mr. Pilliod suggested the following change to make it more consistent with the end of 340-41-150(3):

Where natural conditions are responsible for exceedance of the values in OAR 340-41-150(1), or beneficial uses are not significantly impaired....

The reason for this proposed addition, Mr. Pilliod said, is he was unsure of the meaning if the term "significantly" is left out. Also, Mr. Pilliod asked if it was intended that after the Department had determined that particular levels have been exceeded, and after the study has taken place, the Commission would make findings and conclusions before implementing a control strategy. Director Hansen replied that the change of the term "nuisance" to "undesirable" was not a significant issue, and it was clearly the Department's intent that findings and recommendations be brought back to the Commission. Mr. Pilliod said that as long as that was a part of the record he would have no objection.

Chairman Petersen said he did not like "significantly" as a word in rules and suggested that "materially" might be better, but was not arguing one way or another.

Gary Krahmer, Unified Sewerage Agency of Washington County (USA), supported the comments by the City of Tualatin, and expressed a commitment for USA to participate in the study of the Tualatin Basin.

Gene Apple, City of Portland, Bureau of Environmental Services, supported the Director's Recommendation. He congratulated the Department staff on their responsiveness and on their cooperation. He was concerned that NEDC had not brought their concerns forward in meetings the Department had with interested parties. Mr. Apple said there were differences in the levels that would flag a study and in levels that would flag immediate action.

It was MOVED by Chairman Petersen, seconded by Commissioner Bishop and passed unanimously that the Director's Recommendation be approved with the following amendment to 340-41-150(1):

The following average chlorophyll a values shall be used to identify water bodies where phytoplankton may create a nuisance and may impair the recognized beneficial uses:

AGENDA ITEM I: City of Klamath Falls Petition for 401 Certification
Rules Amendment (Salt Caves)

The City of Klamath Falls has petitioned the Commission to reconsider its denial of previous petitions submitted by the City, reconsider the Section 401 rules which the Commission has adopted, and to modify the rules in a manner which would exempt the proposed Salt Caves hydroelectric project from certain sections of the 401 Certification rules.

Director's Recommendation

The Director recommends that the Commission deny the petition and direct the Department to execute a denial order incorporating the findings and reasons of the staff report.

Bruce White, Sierra Club, said they had already submitted comments on the City's request. They were opposed to the motion for reconsideration and felt that the request for rulemaking was not necessary given the fact there is an exemption in HB 2990. Mr. White felt that the Commission was within its discretion in adopting the rules and did not think it would be beneficial for the Commission to change their position at this time. He said the current rules conform to HB 2990 policy directions and the Commission was not entitled to question the legislative intent of HB 2990. He stated support for the Director's Recommendation, but was concerned that the staff had concluded that the City's proposal, which is not yet concrete, would be exempt under HB 2990. He said the question was yet to be determined.

Chairman Petersen asked where Mr. White found this conclusion. Mr. White replied that in the staff report it seemed to him the Director was saying that Salt Caves would be exempt from HB 2990 and at this point it was inappropriate for record to be made on this point. Director Hansen said the language on page one of the staff report was quoted from the statute. At issue was whether or not this newly revised project meets the statutory requirement. Director Hansen said the Department did not intend to address that in this staff report. He suggested it would be best to reword summation no. 4 in the staff report to reflect the language on page one of the staff report.

Peter Glaser, of the law firm of Duncan, Weinberg and Miller, appeared on behalf of the City of Klamath Falls. They were requesting that the Commission reconsider the 401 rules they adopted in November. He asked that the rules be restructured so that the applicant does not have to meet non-water quality requirements. Mr. Glaser said the City of Klamath Falls recently announced a new proposal for the Salt Caves project and hoped they could meet the water quality rules. He was not saying that the Salt Caves project should not have to meet non-water quality requirements imposed by other agencies which apply their rules to the project. The City was concerned about the Department getting away from its traditional water quality expertise, Mr. Glaser continued.

Mr. Glaser said the language of the rule should be clarified to say the Salt Caves project is exempt from additional non-water quality requirements. He said it was necessary to understand going into the process what the requirements are. He was not arguing the exemption of the Salt Caves project from HB 2990 at this time. He stressed it was important to have clarity in the rules.

Mr. Glaser said he agreed with the Sierra Club that rulemaking was not necessary at this time. He suggested the Commission could just act on this proposal without going out to hearing on rulemaking.

Michael Huston, Assistant Attorney General, stated that there may be requirements in Section 401 Administrative Rules which could not legally be applied to the Salt Caves project, but it would be impossible to determine that at this point. The determination depends on legal issues, he said, and in many cases those issues will be resolved in other forums. He said he did not deny Mr. Glaser's issues, but could not resolve them in the abstract. Mr. Huston further indicated that the Department did not agree with Mr. Glaser's argument that projects exempt from the requirement of HB 2990 are also exempt from state statutory requirements to obtain a water appropriation permit or an energy facility site certificate.

Commissioner Denecke MOVED that the Director's Recommendation be approved and indicated he was not making a judgment on whether or not the project was exempt from HB 2990. Commissioner Buist seconded the motion and it was passed unanimously.

AGENDA ITEM J: Informational Report on the Development of Landfill Site-Selection Criteria

This item provides information on the status of the Department's program to develop landfill site-selection criteria. The criteria will be used by the Department to identify a suitable landfill site or sites for the Portland metropolitan area, as authorized by Senate Bill 662.

The report describes the Department and Commission activities that will lead to the Commission's issuance of an order to establish a site by July 1, 1987. It also provides specific information on the group of criteria (pass-fail criteria) that will be applied during the first stage of the site selection process.

Director's Recommendation

It is recommended that the Commission review only the revised pass-fail criteria at its March 14, 1986 meeting, and that it concur in the following course of action to be pursued by the Department:

1. The finalized pass-fail criteria will be provided to the site selection consultant, and will be used in the site identification process (development of the initial list of potential sites).

2. The Department will continue to solicit public comment on the evaluation and final decision criteria. A public hearing will be held on March 27, 1986 and written comments will be accepted until March 31, 1986.
3. The revised evaluation and final decision criteria will be submitted to and reviewed by the EQC before those criteria are used for the evaluation of specific sites. Actual site evaluation is scheduled to begin on or about May 1, 1986.

Commissioner Denecke asked if the Department had been able to use some of the material the Metropolitan Service District (Metro) came up with. Steve Greenwood, of the Department's Hazardous and Solid Waste Division, replied that this criteria took the Metro siting criteria into consideration as well as many others.

Director Hansen said the Department would expect the final evaluation criteria as well as the decision criteria will be back before the Commission at its April 25, 1986 meeting prior to the identification of any potential sites. The criteria needs to be in place before the sites are identified.

Chairman Petersen said this was an excellent report in terms of clarity and was helpful to the Commission as its first pass on a very complex issue. He said the pass-fail criteria made sense and recognized the significant amount of public/advisory committee input. He stressed that the perception that this is an open, fair and equitable process must be maintained.

Brian Lightcap, West Multnomah Soil and Water Conservation District, testified they had reviewed the criteria and sent a letter to Mr. Greenwood outlining their concerns, most of which have been addressed in the staff report. Mr. Lightcap was concerned that people who look at the criteria know the definition of floodway. He said the floodway was restrictive as to development, but the floodway fringe was not. Kent Mathiot, of the Department's Hazardous and Solid Waste Division, replied that the Department was using U.S. Army Corps of Engineers maps which were fairly restrictive. The intent is to avoid the floodway, but not the floodway fringe.

Mr. Lightcap said in his letter to the Department he had requested the Department look at siting multiple landfills. However, he was now rethinking that proposal as several sites with 15 year life will still only last 15 years. He said he would get back to the Department with more input on this proposal.

Director Hansen said the pass-fail criteria will look at a number of matters, but the intent is to narrow the sites on which initial analysis can be done.

The Commission indicated acceptance of the report.

OTHER BUSINESS

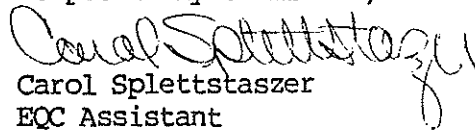
Commissioner Denecke noted the Commission had received the Hearing Officer's Findings of Fact, Conclusions of Law and Final order on DEQ v. Althaus in which the Hearing Officer concluded that "Oregon law does not establish an effective method of imposing a civil penalty for the ... violations because the legislative direction is incomplete and DEQ cannot supply a basic but omitted statutory element." Commissioner Denecke asked that this be the subject of one of the Department's legislative concepts.

In another matter, the Commission unanimously voted to appoint the following hearing officers for the Threat to Drinking Water hearings to be held March 17, 1986.

Mary Halliburton, Larry Patterson, Krystyna Wolniakowski,
Tom Lucas, Gregg Pettit, Mark Ronayne, Sherman Olson,
John Jackson and Kent Ashbaker

There being no further business the meeting was adjourned.

Respectfully submitted,


Carol Spletstaszer
EQC Assistant

THESE MINUTES ARE NOT FINAL UNTIL APPROVED BY THE EQC

MINUTES OF THE ONE HUNDRED SIXTY-NINTH MEETING

OF THE

OREGON ENVIRONMENTAL QUALITY COMMISSION

January 31, 1986

On Friday, January 31, 1986, the one hundred sixty-ninth meeting of the Oregon Environmental Quality Commission convened in room 1400 of the Department of Environmental Quality offices, 522 SW Fifth Avenue, in Portland, Oregon. Present were Commission Chairman James Petersen, Vice Chairman Arno Denecke, and Commission members Mary Bishop and Wallace Brill. Commissioner Sonia Buist was absent. Present on behalf of the Department were its Director, Fred Hansen, and several members of the Department staff.

The staff reports presented at this meeting, which contain the Director's recommendations mentioned in these minutes, are on file in the Office of the Director of the Department of Environmental Quality, 522 SW Fifth Avenue, Portland, Oregon. Written information submitted at this meeting is hereby made a part of this record and is on file at the above address.

BREAKFAST MEETING

All Commission members, except Sonia Buist were present at the breakfast meeting.

1. Introduction of New Division Administrator for Laboratory

Fred Hansen informed the Commission that Alan Hose, Laboratories Manager had recently been promoted to the Division Administrator of that Division. The Commission congratulated Mr. Hose on his promotion.

2. Suspected EDB Contamination

Director Hansen reported that recent tests had not found the generalized pollution in Willamette Valley drinking water wells originally feared after reports of tests done by the U.S. Environmental Protection Agency (EPA). Except for a couple of isolated cases, the Department found no instances of wells being above the

10 parts per trillion (ppt) standard tested for. Alan Hose of the Department's Laboratories Division said the differences in tests could be attributed to a number of things such as the time elapsed between when EPA took samples in June and the Department took

samples in January. That may have been enough time for the problem to correct itself. Also, he continued, in working with samples being tested for such small amounts, the chance of contamination of those samples was high.

Director Hansen said that it was originally the Department's intent to split samples with the Department of Agriculture. However it was found that the sample bottles the Department intended to use were not adequate for the type of sampling conducted by the Department of Agriculture. Director Hansen commended the Department's Laboratory staff for its diligence in finally finding the appropriate bottles in Philadelphia and having them air-expressed to Portland so the sampling could be conducted.

In addition, Director Hansen noted that Chairman Petersen was able to attend a meeting with the Governor regarding this potentially serious pollution problem. Director Hansen said he appreciated Chairman Petersen's involvement.

3. Forestry Issues

Director Hansen informed the Commission the Department was working on updating the Smoke Management Program with the Department of Forestry and were close to an agreement. In addition, an advisory committee had been appointed to study the visibility protection issue. Director Hansen said that as a result of the study and the agreement with the Department of Forestry, there should be a substantial reduction in slash burning in the Cascades during the summer months. As this is a very sensitive issue with the timber industry, Director Hansen said, the Department would be looking toward coordination with the Commission and its counterpart, the Board of Forestry.

In addition, under the Section 208 of the Federal Clean Water Act, the Department is required to annually certify the Department of Forestry's plan as best management practices to protect water quality. The Department had not done that for some time, but was now in the review process. This would require formal EQC action and a forwarding of recommendations to the Department of Forestry.

Director Hansen said he and members of the Department staff had recently taken a tour conducted by the Department of Forestry and were impressed with the improvement in forestry practices. However in some areas, improvement was still needed.

Chairman Petersen asked now the Smoke Management Plan related to visibility. Tom Bispham, Administrator of the Department's Air Quality Division, replied that the intent was to deal with the Smoke Management Plan and visibility jointly and incorporate visibility into the Smoke Management Plan.

Director Hansen reported that there may be some money from the U.S. Environmental Protection Agency (EPA) to look into the emissions of toxic air pollutants from slash burning. He said he had a commitment from the Department of Forestry to look at this problem jointly with DEQ. In addition, the Department would also be taking a look at field burning for the same reason.

Commissioner Brill, as an aside, asked what had happened to the oyster bed contamination problem on the coast. Harold Sawyer, Administrator of the Department's Water Quality Division, replied that the issue was an application to the Department of Fish & Wildlife to apply Sevin to the oyster beds. This matter was now in the courts and Mr. Sawyer did not know the current status. He said he would get back to Commissioner Brill.

4. Legislative Concepts

Director Hansen, Stan Biles (Assistant to the Director) and Department Division Administrators discussed with the Commission preliminary concepts for proposed legislation for the 1987 Legislative Session. This discussion was continued at the Commission's lunch meeting.

FORMAL MEETING

Director Hansen reported that the Department had received final authorization to operate hazardous waste program effective today, January 31.

In addition Director Hansen commented that today marked his two year anniversary as Director of the Department. He thanked the Commission for the opportunity. Chairman Petersen remarked that he felt hiring Director Hansen was one of the best decisions the Commission ever made. The rest of the Commission agreed.

AGENDA ITEM A: Minutes of the November 21, 1985 special meeting and work session and the November 22, 1985 regular meeting.

It was MOVED by Commissioner Bishop, seconded by Commissioner Denecke and passed unanimously that the minutes of the November 21 special meeting and work session be approved.

On Page 6 of the November 22 minutes, Commissioner Bishop asked that the following language be reworded:

"...they realized that whatever findings were required under Section 48-025, subsection 2, the Department would have to do no matter what."

On page 16 of the November 22 minutes, Commissioner Denecke corrected the vote on Agenda Item O, the "Variance Review for the Brookings Energy Facility." Commissioner Denecke, not Commissioner Brill was the dissenting vote.

In addition, Commissioner Denecke wanted to be certain that the material on page 5 of the November 22 minutes, under Agenda Item M, the "Request for Adoption of Rules for Granting Water Quality Standards Compliance Certification pursuant to requirements of Section 401 of the Federal Clean Water Act", correctly stated the views of Dr. Jack Smith.

The Commission deferred action on this item until later in the meeting.

At the end of the meeting, the following action was taken regarding the November 22 minutes.

Harold Sawyer of the Department's Water Quality Division presented the following wording change requested by Commissioner Bishop:

Page 6 of the November 22, 1986 Minutes, first paragraph, reword the following language:

[When the Department was discussing changes to this subsection, they realized that whatever findings were required under Section 48-025(2), the Department would have to do no matter what.] The Department realized findings required under Section 48-025(2) would have to be addressed.

Commissioner Denecke said that Dr. Smith had indicated the language in the minutes correctly stated his views.

The vote on Item O was corrected.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill and passed unanimously that the minutes of the November 22 meeting be approved as corrected.

AGENDA ITEM B: Monthly Activity Report for October and November, 1985

Referring to the Contested Case Log section of the Activity Report, Commissioner Bishop asked where the Department was in rescheduling the hearings on Clearwater. Linda Zucker, the Commission's Hearings Officer, replied that the initial hearing had been held but not concluded as the attorneys wished to submit further information.

It was MOVED by Commissioner Denecke, seconded by Commissioner Bishop and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM C: Tax Credit Applications

Director's Recommendation

It is recommended that the Commission take the following action:

1. Issue tax credit applications for facilities subject to old tax credit laws:

T-1759	Portland General Electric Company
T-1762	Teledyne Industries, Inc.
T-1763	Teledyne Industries, Inc.
T-1783	Teledyne Industries, Inc.
T-1785	Teledyne Industries, Inc.
T-1787	Teledyne Industries, Inc.

2. Issue tax credit certificates for facilities subject to the 1982 tax credit laws:

T-1743	Rosboro Lumber Company
T-1758	Tektronix, Inc.
T-1761	Delta Engineering & Mfg. Co.
T-1772	Publishers Paper Company
T-1773	Georgia-Pacific Corporation
T-1774	Stayton Canning Company Coop.
T-1775	Stayton Canning Company Coop.
T-1786	Teledyne Industries, Inc.
T-1790	Dunn-LeBlanc, Inc.

3. Revoke Certificates 1156 and 1557 issued to Publishers Paper Company.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill and passed unanimously that the Director's Recommendation be approved.

Public Forum

Robert Forthan, an employee with the Department's Vehicle Inspection Program, testified that he had been with the Department for 10 years. He said he did not trust white people with the protection of the air. Mr. Forthan said he felt well-educated white people think they are superior in Oregon, and even if he had a Ph.D. it would not make a difference. Mr. Forthan then presented a speech he titled "The Compromise of 1986." Mr. Forthan said he would like to be the next Governor of Oregon. He would try to get more people to come to Oregon, consolidate housing into places similar to the Superdome, and ban cars. Mr. Forthan said he was for environmental affirmative action.

Pat Brown, resident of mid-Multnomah County, testified regarding the Commission's upcoming action on the treat to drinking water in that area. She said there were more and more two-parent families in the area who were having trouble making ends meet and the plan to sewer the area would cause many to lose their homes. Ms. Brown said that school levies in the area have failed and residents were over-taxed and over-burdened. Ms. Brown asked how many new sewer hookups had happened since the ban on cesspool installation was altered over a year ago.

Chairman Petersen said he did not have that information in front of him, but assured Ms. Brown that Mr. Sawyer of the Water Quality Division would get back to her with the answer.

Herb Brown, on the Board of Directors of the Multnomah County Community Action Agency and United Citizens in Action, said he was taking this opportunity to address the Commission on the threat to drinking water in mid-Multnomah County as he would not be allowed to talk at the Commission's February 7 meeting. He said he had evidence of conspiracy among government officials regarding actions such as determining a threat to drinking water and attempts to annex the area. Mr. Brown said this evidence would come out in lawsuits filed after the Commission made a decision. Mr. Brown thanked Chairman Petersen for the response to his letter requesting an additional hearing, even though the request was denied. Nevertheless, Mr. Brown felt an additional hearing was in order. He said the problem was correcting itself now, and would continue to do so as new construction must be hooked up to sewers. Mr. Brown said that like a movie where an actor is picked to play a part, the laws regarding the determination of a threat to drinking water were changed to fit the situation. He asked the Commission to give careful consideration to the more than 1200 letters they had received, principally as a result of efforts by citizen's groups and a letter to residents from Representative Ron McCarty. Mr. Brown said he was not convinced the plan was the most affordable. In his opinion, the most affordable plan would be to treat the drinking water, or not use the aquifer for drinking water.

Chairman Petersen assured Mr. Brown that the Commission was considering each letter as individual comment. He said that the particular statute was perhaps inartfully drawn by the Legislature, but nevertheless the Commission was bound to abide by the law. Chairman Petersen stressed the statue provides not only for initial public hearings, but after the Commission makes findings and recommendations they must publish notice of those findings and recommendations, and people may then petition for arguments. In Chairman Petersen's opinion, the public had had more than ample opportunity to express themselves. Chairman Petersen said it was his view that an additional public hearing at this time would only delay the process. Mr. Brown replied he did not agree. Mr. Brown also indicated he might be a candidate for the Oregon State Senate.

Michael Rosen, Water Quality Committee of Columbia Group of the Sierra Club, testified regarding notification requirements for the underground storage tank program. He said this was a serious problem affecting the health of the nation's communities. Nationally property damage ran into the \$100's of millions. He commended the Department for taking a strong initial stance with the notification rules for the underground storage tank program. Mr. Rosen said that as originally proposed the Department's rules went beyond the minimums required by law. He was concerned that as a result of comment received at public hearing the Department has decided not to require the additional information, but only that required by the U.S. Environmental Protection Agency. Mr. Rosen suggested a compromise by which the regulated community submit the minimum information required by federal law by the May 8, 1986 deadline. The Department could then require the additional information be submitted by a later date. Mr. Rosen asked that the Commission to consider this proposal and require the Department to implement the rules as originally drafted, except for submission of the additional information. He said states have the ability to implement rules more stringent than those required by the federal government.

Director Hansen replied that the agenda item which would have brought rules forward for Commission approval had been deleted from the agenda as the Department believed a better way would be to send out a voluntary form asking for the additional information. The answers to the questions on the voluntary form would enable the Department to provide the best program. The Department would take a look at the information received, and if necessary, again explore requiring the additional information. Director Hansen said the Department was going ahead with the form required by EPA and may ask for additional information later. Director Hansen said he agreed with Mr. Rosen that more information was better.

Chairman Petersen said he was in agreement with the Department's action. He said it would be less of a burden on the regulated community if the necessary information could be acquired voluntarily, rather than through additional regulation.

Bill Johnson, appeared representing ENUF (End Noxious Unhealthy Fumes). He said his group was for economic development in the form of using straw and wood waste in pelletized form for home heating fuel. He said the Smoke Management Program operated at the expense of Oregonians who suffer from field burning smoke. Mr. Johnson reminded the Commission that there were many people in the Willamette Valley who suffer from field burning smoke who do not live in the heavily populated areas of Eugene and Salem which have special arrangements under the Smoke Management Plan so smoke is not directed to those areas. Mr. Johnson said the health effects from field burning had never been adequately researched. There is now research being done on the use of microwaves for field sanitation, he continued. Also, an industry could be built to pelletize straw for home heating fuel, and thus eliminate the need to burn the fields. Mr. Johnson asked the Commission to encourage the release of funds for private research into alternatives to field burning. Thus, clean air could be accomplished.

Chairman Petersen said he understood that what was burned on the fields was stubble and that burning was used to sanitize the fields. Mr. Johnson replied that in most cases the burning was primarily to get rid of straw. Tom Bispham, Administrator of the Department's Air Quality Division, said that if there were solid markets for the straw, it would not be burned. Mr. Bispham said that there is a foreign market for straw, but it fluctuates greatly and is not dependable. The burning of straw is a timesaver for farmers. Mr. Bispham said that the burning of bales, as is done in some areas, seems to be cleaner than burning the straw on the fields, but the Department would like to see alternatives developed and promoted and put into production. The Department had reviewed one woodstove which uses straw pellets as fuel, and it is a very clean burning stove. He said the Field Burning Alternatives Advisory Committee had committed money to the stove manufacturer to develop and improve the burner. However, Mr. Bispham continued, money was only available for development, not for marketing. He said manufacturers of pelletized straw were having trouble finding monies for marketing. Mr. Johnson said the market potential was tremendous, but no funds for marketing were available.

Chairman Petersen said the Commission was dedicated to solving the field burning problem as quickly as possible. He asked Mr. Bispham to provide more information to the Commission during its discussion of legislative concepts at its lunch meeting.

Director Hansen said that statutes allowed for the burning of up to 250,000 acres per year and the Department works to manage the smoke so the impact is as little as possible.

AGENDA ITEM D: Request for Authorization to conduct a public hearing on amendments to the State Implementation Plan regarding stack heights and dispersion techniques, deleting OAR 340-20-340 and 340-20-345, adding replacement rule 340-20-037.

The U.S. Environmental Protection Agency (EPA) has been forced by court action to change its stack height and dispersion techniques rule. In response to EPA's request, the Commission is asked to consider changing the comparable Oregon rule which limits the use of excessive stack heights and dispersion techniques in calculating compliance with ambient air standards. The proposed rule change would keep Oregon's rule up to date with EPA's so the Department could continue to administer the federal program in Oregon. There are no existing Oregon tall stacks in Oregon affected by the rule change.

Director's Recommendation

It is recommended the Commission authorize a hearing to consider adoption of the new federal stack height rule by reference in OAR 340-20-037 and repealing the present Oregon stack height rule OAR

340-20-340 and 20-345 as amendments to the State Implementation plan.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM E: Request for authorization to conduct a public hearing on proposed consolidation and updating of the Oregon State Clean Air Act Implementation Plan, OAR 340-20-047.

The Oregon State Clean Air Act Implementation Plan (SIP) was first adopted in 1972 in response to requirements of the Clean Air Act of 1970. Since that time the SIP has been amended several times as a result of amendments to the Clean Air Act, revision to U.S. Environmental Protection Agency (EPA) regulations, and evolving technology. These changes to the SIP have caused several problems to develop, including: the SIP has become fragmented; portions of the SIP have become obsolete or unnecessary; some SIP regulations are not exactly the same as the corresponding regulation the State is currently enforcing. This is a request for authorization to conduct a public hearing on consolidation and updating of the Oregon State Implementation Plan as a means of correcting the problems that have developed over the past 14 years.

Director's Recommendation

Based on the summation in the staff report, it is recommended that the Commission authorize public hearings to accept testimony on repealing the existing Oregon State Implementation Plan, OAR 340-20-047, and adoption of an updated SIP consisting of Volumes 2 and 3 of the State of Oregon Air Quality Control Program.

It was MOVED by Commissioner Bishop, seconded by Commissioner Denecke and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM F: Request for authorization to conduct a public hearing on proposed amendments to on-site sewage disposal rules, OAR Chapter 340, Divisions 71, 72 and 73

This is a request for authorization to conduct public hearings on the question of amending the On-Site Sewage Disposal Rules. Testimony would be received on several housekeeping and substantive issues. Hearings are proposed to be held in Bend, Medford, Newport and Portland during the latter part of February.

Director's Recommendation

Based on the summation in the staff report, it is recommended the Commission authorize public hearings to take testimony on proposed

amendments to On-Site Sewage Disposal rules, OAR Chapter 340, Divisions 71, 72 and 73, as presented in Attachment F to the staff report.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM G: Request for authorization to conduct a public hearing on the proposed amendment of Hazardous Waste Management Civil Penalty Schedule

The Department is proposing to amend the schedule of minimum penalties for hazardous waste violations. The existing schedule adopted in 1982 does not specifically account for violations of certain rules adopted in 1984, although by default, these violations have a \$100 minimum penalty.

Additionally, the Department is proposing to incorporate into rule a civil penalty schedule for destruction of wildlife caused by hazardous waste which was enacted by the 1985 Legislature in SB 873.

Director's Recommendation

Based upon the summation in the staff report, it is recommended the Commission authorize the Department to conduct a public hearing to receive testimony on the proposed amendment of OAR 340-12-068.

Chairman Petersen asked what SB 873 did. Director Hansen replied that it listed the price and costs associated with various animals. This information was pulled from existing Department of Fish & Wildlife statutes.

It was MOVED by Commissioner Bishop, seconded by Commissioner Denecke and passed unanimously that the Director's recommendation be approved.

AGENDA ITEM H: Request for authorization to conduct a public hearing on proposed changes in rules relating to the Opportunity to Recycle (OAR 340-60-010 and 340-60-030), identifying yard debris as a principal recyclable material in the Portland, Washington, Multnomah and proposed West Linn wasteshed

It is the Department's assessment that yard debris fits the definition of principal recyclable material in the Portland, Washington, Multnomah, Clackamas and proposed West Linn wastesheds. The Department is requesting that the Commission to authorize a public hearing on proposed rule changes identifying yard debris as a principal recyclable material in those wastesheds.

If yard debris is listed as a principal recyclable material, then local governments and other affected parties would have to either provide a collection system, or demonstrate to the Department that the material is not a recyclable material at specific locations in the wasteshed.

Director's Recommendation

Based upon the summation in the staff report, it is recommended the Commission authorize a public hearing on the proposed rule changes identifying yard debris as a principal recyclable material in the Portland, Washington, Multnomah, Clackamas and proposed West Linn wastesheds, effective July 1, 1987.

Commissioner Denecke asked if his understanding was correct that if the Commission finds that yard debris is a recyclable material, then it would be up to local jurisdictions to say it is not a recyclable material in their area. Director Hansen replied that the requirement was when the Commission lists a material as recyclable, then local government is required to provide for the recycling of that item. The local governments are required to report back to the Commission on how they have provided for the recycling of listed materials, or provide an explanation of why that material does not meet the definition of a recyclable material for their jurisdiction.

Chairman Petersen asked if there had been discussions with local jurisdictions regarding the listing of yard debris as a recyclable material. Lorie Parker, of the Department's Hazardous and Solid Waste Division, replied the Department had held two informational meetings with all counties present, and had informally discussed the matter with the City of Portland. Director Hansen said the City of Portland was concerned that yard debris was not a year-round generated item. SB 405 did not allow for seasonal variations. The City of Portland felt the proposal would not be difficult as long as they could address yard debris seasonally. Chairman Petersen commented that the rules under SB 405 were flexible enough to allow local jurisdictions to do whatever was necessary to get the job done. He felt that listing yard debris as a principal recyclable material would be a great boon to the Commission's backyard burning ban in the Portland Metropolitan Area. Ms. Parker commented that recycling yard debris was also a large part of the Metro Waste Reduction Plan the Commission would be considering at a special meeting on February 7.

Director Hansen said the Department would expect to get comments from local governments that there are methods other than on-route collection to deal with yard debris, such as neighborhood cleanups, etc.

For the record, Ms. Parker commented that the place for hearing for the Washington County meeting had been changed.

It was MOVED by Commissioner Denecke, seconded by Commissioner Bishop, and passed unanimously that the Director's Recommendation be approved.

After the Commission voted, Chairman Petersen noted two people had signed up to testify on this matter.

Chuck Geyer, Metro, read a letter from Rick Gustafson expressing support for the Director's recommendation for the following reasons:

1. Existing yard debris processing facilities have demonstrated continued growth in the amounts of material received, processed and marketed over the last several years.
2. The cost of collecting and recycling yard debris as a source separated material is less than the cost of collecting and disposing of the material as a solid waste.
3. Metro has targeted the removal of yard debris from the waste stream as part of its Waste Reduction Program.
4. Metro is constructing a yard debris processing facility at the St. Johns Landfill, with capacity which will exceed the supply currently available at the site.

Dave Phillips, Clackamas County Solid Waste Administrator, testified he was dismayed with the reports presented by the Department staff as a result of public hearings. Mr. Phillips said he had been on Metro's yard debris committee and had also supported the backyard burning ban. However, he was now having serious doubts that yard debris can be recycled by such facilities as McFarlande's. Mr. Phillips said McFarlande's pile of yard debris was growing at a rapid rate, but it is just being stockpiled without being processed. The facility had been having some difficulty with its processing equipment along with not being able to market the full range of material. He said the Clackamas County Economic Development Commission was concerned about the aesthetics of the site and its effect on economic development in the area. The unsightly appearance of the site has inhibited the sale of properties in the area. Mr. Phillips said Clackamas County was not confident they have the market for yard debris as a recyclable material even after taking four years to get where they are now, and some communities were not as far along as Clackamas County.

Commissioner Denecke asked what the principal market was for recycled yard debris. Mr. Phillips replied that it can be used for a soil amendment and McFarlande's has a State Highway Division project contract for that purpose. Also, it was being used as compost.

Mr. Phillips testified he was not confident that all comments made during public hearings were being accurately forwarded to the Commission and wanted the Commission to be aware this was a problem.

As a result of the above testimony, Chairman Petersen asked if anyone on the Commission wanted to change their vote about taking this matter to public hearing. The Commission indicated they would stand with their previous vote.

Chairman Petersen said he was inclined to think the hearing process would get the input the Commission needed to adopt rules. He was sorry Mr. Phillips comments were not included in the staff report. He told Mr. Phillips he appreciated him coming to this meeting, but would have voted the same had he heard Mr. Phillips comments before the Commission voted on the matter. Chairman Petersen said the ability to recycle yard debris was still important to a lot of things the Commission was trying to do. He said Mr. Phillips comments were enlightening as he had not realized there was a problem with McFarland's. He encouraged Mr. Phillips to comment at the public hearing to help determine if there was a market for recycled yard debris.

Commissioner Bishop commented that it was interesting to note that the original problem was there was not enough volume of yard debris to make it marketable, now the problem was just the opposite--too much yard debris.

Mr. Phillips commented he really wanted to see recycling of yard debris work as an alternative to open burning, but he was no longer comfortable with the situation.

AGENDA ITEM I: Appeal of On-Site Sewage Disposal System Variance by William F. Holdner

Mr. William Holdner applied to the Department for a variance to On-Site Sewage Disposal Rules for a sewage disposal system. A variance hearing was held and the Variance Officer granted a variance to the groundwater separation requirement, but denied a variance to certain construction standards. Mr. Holdner has filed an appeal to the Commission.

Director's Recommendation

Based on the findings in the summation in the staff report, it is recommended that the Commission adopt the findings of the Variance Officer as the Commission's findings and uphold the decision to approve the variance to the groundwater separation requirement and deny the variance to construction standards.

Before Mr. Holdner began arguing his appeal, he wanted to comment on Mr. Johnson's comments during public forum about the use of straw. Mr. Holdner owns a farm on which he raises cattle. He testified to the difficulty of finding straw to buy for feed. Mr. Holdner said farmers should be charged more for permits to burn and then they would find alternatives. Mr. Holdner was also concerned about the chemicals the grass seed growers use. He said the chemicals wind up in ditches where cattle may drink and become poisoned.

Mr. Holdner testified he was trying to get a subsurface sewage disposal system to serve an office and other buildings on his property. In 1983 when he applied for a permit, he was given information about requirements and was told the only system he could have was a sand

filter. Mr. Holdner said his proposal for a minimal underground system was ignored. Mr. Holdner said he was opposed to an above-ground sand filter system because of the space it would take up and the danger it would pose to his cattle. Mr. Holder said the Department had largely ignored his needs.

Before this time, Mr. Holdner said, he had not had any need to apply for a subsurface system, and when he did he was not given instructions from the Department or the County on how to apply. He originally applied for a 150 gallon system and was told he needed a 450 gallon system and would need to apply for a variance.

Mr. Holdner said he was told by the county he would never get a permit. He feels this is because of bad feelings between him and the county over other matters. He contacted Mr. Charles Gray of the Department, told Mr. Gray of the problems he was having with the county, and asked Mr. Gray to make an independent assessment. He said Mr. Gray agreed, but when Mr. Gray went to the property he was accompanied by a representative of the County. Mr. Holdner said Mr. Gray did not have an adequate explanation of why he asked the county to accompany him. At this time, Mr. Holdner said, Mr. Gray again told him the only system he could approve would be a sand filter system. Later on, Dr. Robert Paeth of the Department also inspected the site and, Mr. Holdner said, also told him the only system he could have would be a sand filter. When Dr. Paeth inspected the property, Mr. Holder continued, there was also a question about just where the temporary water table was.

At this point, Mr. Holdner said, he let the matter go until the summer of 1984 when he again contacted Mr. Gray. He told Mr. Gray he wanted a minimal system for an office. He said Mr. Gray told him that a permit would not be needed if the system was used primarily for an office. Mr. Holdner then hired someone to install an underground system. A year later, Mr. Holdner said, he went to the County to get a siting permit and the County Sanitarian told him the system had been installed illegally.

Mr. Holdner said he then applied for a variance, and Sherman Olson, the Variance Officer inspected the property. Mr. Olson reviewed the site, Mr. Holdner said, and discussed with him the tank and drainfield. Mr. Holdner said he had covered the site with topsoil so he could plant on top of it. He had to dig 11 more test holes for Mr. Olson, which were deeper than they should have been because of the topsoil. After the hearing, Mr. Holdner testified, Mr. Olson told him it was a good system. Mr. Holdner said Mr. Olson told him he would have a decision within one week, but it took more than three weeks. When the variance was received, Mr. Holdner said, Mr. Olson had attached many conditions to it, including complying with all county ordinances. Mr. Holdner said he wondered if DEQ was wanting to be cooperative or not.

Chairman Petersen asked if Mr. Gray had told Mr. Holdner he did not need a permit. Sherman Olson of the Department's Water Quality Division and the Variance Office in this matter, said he had talked with Mr. Gray, and Mr. Gray said he had not told Mr. Holdner he did not

Chairman Petersen asked Mr. Holdner how many acres he had, and asked if there was somewhere else on the property an approvable system could be installed. Mr. Holdner said there were 104 acres, but it was mostly very flat and there was no other place suitable for a system. Mr. Olson agreed. Mr. Olson said he had thoroughly looked at the property during the variance process and Mr. Holdner's chosen location for a system was the only place a system would function. In most places, Mr. Olson said, the water table was too high.

Commissioner Brill asked about a tile dewatering system. Mr. Olson said this was an alternative system used in areas where there was a high groundwater table which could be lowered with a field tile system. However, he said that would require a discharge point. Mr. Olson said it had not been established that type of system would be suitable for Mr. Holdner's property.

Director Hansen said the variance would allow a subsurface system to be installed if installed properly. Mr. Holdner's current system had been installed improperly, he said. Director Hansen said the recommended action would be to go with another subsurface system which is properly installed.

In response to Commissioner Bishop, Mr. Olson said his letter to Mr. Holdner with the variance had attachments giving instructions and a map to position the system. This was on a location adjacent, but slightly lower than the presently installed system. Essentially, Mr. Olson said, this would be a standard system located adjacent to the improperly installed system.

Mr. Holdner showed the Commission pictures of the area. He said he could not put drain tile in because the effluent would end up in the creek where his cattle drink. Mr. Holdner said he had an expert look at the system he had installed and the expert said it was a good system. Mr. Holdner presented the Commission with a letter from the expert.

Commissioner Denecke said that even though neither the County nor the Department would approve a system, Mr. Holdner installed one anyway. Mr. Holdner said he did install a system on the basis of Mr. Gray's comments. He said he did not intend to do it illegally. Mr. Holdner said he had talked to others with the same problem. Mr. Holdner said he believed Mr. Gray erred and offered to take a truth test on any of the issues involved. Chairman Petersen said that would not be necessary.

Mr. Holdner said the drain lines met the rules except for the lower line. He asked the Commission to consider letting him use the upper lines and he would close off the lower line. Chairman Petersen asked if that was a reasonable request. Mr. Olson said that the upper lines

did not meet the rules, based on a document provided by Mr. Holdner showing the grades. Mr. Holdner said he noted in his appeal that the information provided to Mr. Olson was possibly in error. He said he had rerun the measurements and now finds they are within the rules. Mr. Holdner said he had asked Columbia County to review the measurements, but they refused.

It was MOVED by Commissioner Denecke, seconded by Commissioner Bishop and passed unanimously to deny the variance appeal.

Mr. Holdner said he would be filing a lawsuit in court after following the appeal process.

AGENDA ITEM J: Consideration of a petition to amend OAR 340-21-027
(Municipal Incinerators in Coastal Areas)

This item considers a petition from Brookings Energy Facility, Inc. to amend the rule regarding municipal solid waste incineration in coastal areas. At its last meeting, the Commission acted not to approve Brookings Energy Facility's request for an extended variance from the temperature recording provision of the rule. The proposed rule revision would amend the temperature recording requirement and the other provisions of the current rule.

Director's Recommendation

It is recommended that the Commission deny the Petition to amend OAR 340-21-027 and issue a Commission Order regarding the denial.

Mr. Richard AuFranc, appeared representing Brookings Energy Facility. He said they had not received the staff report until January 28, and then received it from Curry County Commissioner John Mayea, not from the Department. Mr. AuFranc said the company's attorney John Coutrakon understood after the Commission's November meeting he would not be needed to attend this meeting. However, Mr. Coutrakon did feel he needed to comment, and Mr. AuFranc submitted a letter from Mr. Coutrakon into the record.

In his letter, Mr. Coutrakon said his basic concern was one of substantial fairness to all parties concerned and in that regard the Department bears much of the responsibility in not helping to resolve the on-going issues concerning the operation of the Consumat burners.

Mr. Coutrakon wrote that he first entered this matter in the summer of 1985 when he met with Wendy Sims and Bruce Hammon of the Department. In August of 1985 Mr. Coutrakon continued, he wrote a letter to Director Hansen indicating his clients wished to "submit a list of statements and concerns for consideration of the Commission regarding suggested modifications of the present permit so the operations of my client's facilities could realistically meet the rules and guidelines."

Mr. Coutrakon wrote that little else happened until he wrote a letter to the Commission in September 1985 bringing up the same concerns. After the Commission denied the variance appeal at its September meeting, Mr. Coutrakon submitted a petition to amend the coastal incinerator rules and waived the strict time limits on behalf of his clients so the request could be heard at the Commission's January meeting rather than their November meeting.

Mr. Coutrakon wrote that during this entire process he had not received any real communication from the Department in order to resolve this issue.

After the Commission's November meeting, Mr. Coutrakon said he wrote to Wendy Sims proposing a plan for temperature testing at the Brookings Energy Facility as the Commission had directed. Subsequently, Mr. Smart of Brookings Energy Facility received a letter from Tom Bispham of the Department's Air Quality Division which set out an extensive testing procedure and ignored Mr. Coutrakon's letter to Ms. Sims. Mr. Coutrakon wrote that the Commission directed that Brookings Energy Facility submit a plan for the Department's approval, not that the Department would make up an extensive testing plan of its own simply to use Brookings Energy Facility as a research laboratory.

At the Commission's November meeting, Mr. Coutrakon continued, the Department's main objection to the proposed rule change was that they did not have the information on how the incinerators would run according to the manufacturers installation and operating procedures. However, he said, the Department already had the test data from the Coos County burners.

It was his recollection, Mr. Coutrakon wrote, that the Department and Brookings Energy Facility were to be cooperating in resolving the temperature issue, but it appeared to him the Department had not shared or admitted what information it has previously had.

Mr. Coutrakon concluded by saying that the rulemaking modification procedures seemed the best way to resolve this issue.

Mr. Coutrakon's letter is made a part of the Commission's record on this matter.

Mr. AuFranc said because neither the Brookings Energy Facility nor their attorney had been provided a copy of the staff report, or a transcript or tapes from the Commission's November meeting, they asked that the Commission continue this matter until its next meeting so that testing could be completed. He said they had complied with the terms of their permit and had approval from Ms. Sims for the placement of pyrometers. This should be done within the next few days and testing can begin. Mr. AuFranc said testing had been done at the Coos County incinerators which support that the machines are not designed to

operate as the rule requires. He said they were not saying the machines could not burn at 1800 degrees F., but they were designed to run at 1600 degrees F. Mr. AuFranc said the Coos County incinerator's stacks have been damaged by the higher temperatures.

Estle Harlan, consultant for the Oregon Sanitary Service Institute, testified in support of a postponement, and of the proposed rule modification.

Pete Smart, Brookings Energy Facility, said he wanted the Department to understand how they operate. He said they were trying to operate the best way they could to incinerate garbage. He said they operated for six years in compliance with their permit, until the rule was changed. They are not now in compliance as burning at the higher temperatures would damage their equipment, he said.

Chairman Petersen asked if the Department objected to a continuance. Director Hansen replied that some of the issues were clearer now, but until the Department had results of tests it would not know whether or not a change in the rule was appropriate. He said the Department was concerned about air toxics at the lower burning temperatures and would like to find alternatives for the existing system in order to protect public health. Director Hansen said the Department was troubled with operating times and the lack fuel supplements which compound the air toxic problem. If the public health can still be protected with running at lower temperatures, that is what the Department is trying to accomplish.

Chairman Petersen asked if postponing this matter would add to the public health problems. Director Hansen replied that in the short-term, probably not.

Tom Bispham said it was the Department's hope that the sampling and monitoring would be done and a rule change addressed at this meeting. He said that Department staff and Brookings Energy Facility would be more comfortable if the matter were brought back to the Commission after testing was conducted and evaluated.

It was MOVED by Commissioner Denecke, seconded by Commissioner Brill and passed unanimously that this matter be continued until testing was accomplished and evaluated. The Department and Brookings Energy Facility was directed to do this as quickly as possible.

Chairman Petersen commented that any appearance of foot dragging on the part of Brookings Energy Facility would be detrimental.

AGENDA ITEM K: Petition from Gilmore Steel for variance from classification as a solid waste certain iron ore

Gilmore Steel Mills, also known as Oregon Steel Mills, operates a steel manufacturing facility in the Rivergate District of North Portland.

The facility has a pond of iron oxide ore on-site which was once mixed with dust from its air pollution control baghouses. The entire pond then became classified as a hazardous waste.

Under the recycling/reuse regulations of both the Commission and the U.S. Environmental Protection Agency, materials which can be reused or recycled are not considered hazardous wastes. The Contents of the iron ore pond can be reused.

However, one requirement of the recycling/reuse regulations is that 75% of the material must be recycled or reused in every full calendar year. Gilmore was unable to meet this requirement due to unforeseen shipping difficulties. Gilmore is selling the material to a Canadian company.

Gilmore has requested a variance from the classification as a solid waste for its iron ore pond. If granted, the variance would allow the material to be reused. If denied, the contents of the pond would be fully regulated as a hazardous waste surface impoundment.

Director's Recommendation

The Department believes that all wastes should be recycled or reused wherever possible, including hazardous wastes. Gilmore Steel had tried to recycle its iron ore within the time frame of the regulations, but was hampered by unforeseen problems in shipping.

The Department recommends that the Commission consider the factors listed in 40 CFR 260.31 and basing its decision on those factors, grant Gilmore Steel a variance from classification as solid waste certain iron ore material for six months. The Department recommends that the Commission instruct the company to remove the material as soon as possible, and submit a written report to the Department and Commission on its progress prior to the first day of each successive month until all of the material has been transported off-site.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM L: Proposed adoption of Plastics Recycling Tax Credit Rules, OAR Chapter 340, Division 17

The proposed rules have been written to implement the 1985 legislation regarding plastics recycling tax credits. The rules establish a method of determining the percentage of certified investment costs allocable to manufacturing a reclaimed plastic product. They also establish preliminary and final tax certification procedures.

Director's Recommendation

Based upon the summation in the staff report, it is recommended that the Commission adopt the proposed Plastics Recycling Tax Credit Rules, Chapter 340, Division 17.

Commissioner Bishop commented that under 340-17-015(3) (b), seven calendar days for notice of potential Commission action seemed like a short time. Maggie Conley of the Department's Management Services Division agreed, but said that was normally when staff reports are available.

Chairman Petersen said that 340-17-015(1) (b) was confusing and asked if Ms. Conley could draft clearer language.

Ms. Conley said this was an attempt to make these rules as close as possible to the existing preliminary certification rules. She said applicants must wait 30 days after applying for preliminary certification before beginning construction to give the Department time to review their proposal and comment.

Chairman Petersen asked if time was not a problem under 340-17-020(1) (h). Ms. Conley replied that this was a way of trying to get applicants to submit requested information. Otherwise, she said there was no way to clear an application from the Department's records; it is kept in suspension forever. If an application is rejected, she said, the applicant's processing fee will be refunded.

Chairman Petersen asked if there would be an instance when a request for additional time would be rejected. Ms. Conley replied it would only be where an application has gone beyond the two-year deadline for filing. Chairman Petersen asked if adding the language "which request, at the Department's discretion, may or may not be granted" would be a problem. Ms. Conley said it would not.

Chairman Petersen asked Ms. Conley to return later in the meeting with revised language.

At the end of the meeting Ms. Conley proposed the following language changes:

340-17-015(1) (b)

The capital investment must not be made until 30 days after filing an application with DEQ unless DEQ reviews the application and notifies the applicant that the application is complete. If the capital investment is made within 30 days after filing the application and the Department has not notified the applicant that the application is complete, the application will be rejected by the Department.

340-17-020(1) (h)

If the Department determines the application is incomplete for processing and applicant fails to submit requested information within 180 days of the date when the Department requested the information, the application will be rejected. If the applicant makes a written request for additional time to submit requested information, the Department may grant additional time so long as applicant is required to submit requested information by December 31, 1988.

It was MOVED by Commissioner Denecke, seconded by Commissioner Bishop, and passed unanimously that the Director's Recommendation, with rule amendments, be approved.

AGENDA ITEM M: Proposed adoption of amendments to the State Implementation Plan regarding the Ozone Control Strategy for the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Area (AQMA) (OAR 340-20-047, Section 4.3) and Growth Increment Allocation (OAR 340-20-241)

This item proposed revisions to the State Implementation Plan that would: (1) update the ozone control plan for the Portland Area and provide a slightly larger growth cushion for use by new or expanding industries; and (2) revise the formula for allocating the growth cushion for volatile organic compounds (VOC) to new or expanding industries in the Portland area.

The Department had worked with an advisory committee, the Portland Ozone Task Force, to develop these proposed changes. A public hearing was held on November 19, 1985.

Director's Recommendation

Based on the Summation in the staff report, the Director recommends that the Commission adopt the proposed addendum updating the ozone control strategy for the Portland area as a revision to the State Implementation Plan (SIP). The proposed SIP revision includes: an addendum to Section 4.3 of the State of Oregon Clean Air Act Implementation Plan (OAR 340-20-047), and revisions to the new source review rules regarding allocation of growth increments (OAR 340-20-241).

Commissioner Denecke asked what the answer was to Clark County, Washington, not having and Inspection/Maintenance (I/M) program. Merlyn Hough of the Department's Air Quality Division replied that this question had come up a number of times. The staff report summarizes the State of Washington's legislation which states an I/M program can only be implemented if standards are not met. Adding Clark County to the Portland I/M boundaries is not necessary to meet standards in the

airshed. Mr. Hough said it was Washington's position that they are unable under their existing legislation to start a program now, and once standards are met, the program would terminate anyway.

Commissioner Bishop commented that Clark County was a fast growing area and the number of automobiles was increasing. Mr. Hough agreed, but the U.S. Environmental Protection Agency had decided a number of years ago that the Oregon program met the requirements for the airshed.

Chairman Petersen asked if Oregon residents in the tri-county area were providing for additional growth in Clark County. Not at the present time, Mr. Hough replied. There are limits on growth until the airshed is fully in attainment with ozone standards, he said, and there is a small growth cushion that can be used until attainment is met. However, Mr. Hough said, Clark County has no growth credit and they have to continue to operate with offsets. Oregon would have a bigger cushion, he said, if Clark County did have an I/M program.

It was MOVED by Commissioner Denecke, seconded by Commissioner Bishop and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM N: Proposed adoption of amendments to the State
Implementation Plan regarding Volatile Organic
Compound Rules, OAR 340-22-100 to-220-, and Permit
Rules 340-22-155, Table 1

The emission of Volatile Organic Compounds (VOC) into the air is one of the three constituents causing ozone ambient air standard violations in the Portland area. In the five years since the VOC rules were adopted to reduce ozone levels, some problems have been uncovered in attempting to enforce the rules.

Practical control technology has not developed for application on many small surface coating sources and a permanent rule relaxation is justified. Other adjustments arising from five years experience with the rules are proposed for adoption. These rule changes will not adversely affect the Department's strategy to attain the ozone standard by 1987.

Director's Recommendation

Based on the summation in the staff report, it is recommended that the Commission adopt the proposed changes for permit rule 340-20-155(1) and for the VOC rules 340-22-100 to 340-22-220, as amendments to the State Implementation Plan.

Chairman Petersen asked to what extent the Department kept current on best available control technology. Director Hansen replied that is done primarily through communication with the Department's counterparts in other states and through the U.S. Environmental Protection Agency. He said there were enough areas with tight airsheds that there was pressure on industry to come up with best available control technology.

Commissioner Bishop asked how the Department inspected for violations of rules by small gasoline storage facilities. Peter Bosserman of the Department's Air Quality Division replied that it is the responsibility of the delivery truck driver to not fill tanks unless the vapor recovery equipment is in good repair.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM O: Proposed adoption of standards for nuisance
phytoplankton growths

This agenda item proposed adoption of a water quality standard for nuisance phytoplankton growth. The Commission authorized hearings on two alternatives at its September meeting in Bend. These hearings were held in Portland, LaGrande and Medford. The proposed standard specifies average chlorophyll a levels which, if exceeded, would indicate water bodies where further study is needed. In accordance with a schedule approved by the Commission, studies would be conducted to determine probable causes, beneficial use impacts and appropriate control strategies, if needed.

Director's Recommendation

Based on the summation in the staff report, it is recommended that the Commission adopt the revisions of Alternative 1 to OAR Chapter 340-41-150 and direct the Department to make the additional considerations noted in the staff report in the preparation of issue papers which may propose rule amendments scheduled for spring 1986.

Richard Raymond, Cooper Consultants, testified on behalf of the Unified Sewerage Agency of Washington County (USA). He said they had commented extensively at hearings and had looked at the revised proposal which met in large part some of their objections. Mr. Raymond said they feel the proposed standards were premature and not necessary as controls already exist. Mr. Raymond said the currently proposed standards were still ineffective for preventing problems and for solving some problems that might occur. They were pleased there was now no requirement for costly action unless determined by site-specific studies. Mr. Raymond says the current proposal recognizes the inappropriateness of an arbitrary standard, but does not address nondegradation or acute short-term problems which would be detrimental to beneficial uses. Another one of their original objections that had been remedied, Mr. Raymond continued, was that there are now a number of water bodies that would have naturally exceeded the proposed standard.

W. C. Gaffi, City of Portland, testified in general support of the Director's Recommendation. However they were concerned over potential misinterpretation of two provisions in the standards. The first sentence of item (1), he said, states that "no waste shall be discharged and no activities shall be conducted which will cause average chlorophyll a concentrations to exceed the following values:" They feel, he continued, that this language could easily be misinterpreted as requiring immediate control measures or the institution of a building ban in areas served by treatment works discharging to water bodies in noncompliance with the standard.

Another concern, Mr. Gaffi stated, relates to the interpretation of the last paragraph of Section (2) (b) which reads "where natural conditions are responsible for exceedance of the standard in subsection (1) above, or beneficial uses are not impaired, the standard in subsection (1) may be modified to an appropriate level for that water body." This language appears to indicate, he said, that no change in the standard will be made unless one of the above conditions is met. He said the standards should be modified or affirmed based upon the results of a site-specific study.

Mr. Gaffi offered the following modifications to the two sections of concern:

340-41-150(1)

No wastes shall be discharged and no activities shall be conducted subsequent to Commission adoption of control strategies which will cause average Chlorophyll a concentrations to exceed the following values or other values the Commission may adopt:

340-41-150(2) (b)

Proposed deleting the following:

[Where natural conditions are responsible for exceedance of the standard in subsection (1) above, or beneficial uses are not impaired, the standard in subsection (1) may be modified to an appropriate level for that water body.]

Proposed adding the following:

Where study results so indicate, propose modified standards.

340-41-150(2) (c)

Conduct necessary public hearings preliminary to adoption of a control strategy, amended standards, and additional standards after obtaining commission authorization;

Implement the strategy, amended standards and additional standards upon adoption by the Commission.

Mr. Gaffi thanked the Commission for their time and consideration.

Chairman Petersen said he appreciated Mr. Gaffi's suggestions.

John Charles, Oregon Environmental Council (OEC), and also representing the Oregon Chapter of the Sierra Club, testified they were still in support of Alternative 2, but as that was no longer in the Department's recommendation he would not argue further. Mr. Charles said they would like to see a preventative standard, which Alternative 1 is not. With Alternative 1, no water quality gains will be seen for at least a decade. Mr. Charles asked the Commission what would be done about new sources. He suggested a standard should be preventative for future sources if not for existing sources. Mr. Charles said it did not make sense to make a problem worse by issuing more permits until after a study is done. Mr. Charles asked for a policy judgment by the Commission if they want to put a moratorium on future permits if a problem is recognized.

Chairman Petersen asked what the Department thought about Mr. Charles' proposal. Andy Schaedel of the Department's Laboratories Division, replied that there were provisions in the rules on new source facility guidelines that would address Mr. Charles' concerns, and it was not the Department's intent to let a problem get worse.

Director Hansen pointed out that if it was determined the standard had been exceeded it would mean that zero discharge was necessary. Each permit applicant would be evaluated on an individual basis.

Mr. Schaedel commented that in the air quality program, the determination of nonattainment was built on a health standard, however no similar standard existed for water quality, therefore the numbers in the standard were subjective, but the best numbers the Department had.

Chairman Petersen said he was sympathetic to Mr. Charles' concerns that an existing problem not be allowed to become worse, and noted that that was the Department's intent also.

Mr. Charles said that the proposed standard was not much different than that applied under air quality, and once a level is picked it should mean something. It was his opinion that anything above zero discharge would make an existing problem worse. Noting the Department's contention that additional discharges from existing sources was addressed elsewhere in the rules, Mr. Charles said it would be helpful to have that language in these standards so permittees would only have to look in one place to find the standards that applied to them.

Chairman Petersen said he had no objection to Mr. Charles' proposal and asked him to put some language together and return by the end of the meeting.

Gary Krahmer, Unified Sewerage Agency of Washington County (USA), thanked the Commission for the opportunity to address them again on this subject. They supported the City of Portland's proposed changes and hoped the issue could be closed at this meeting.

Lorrie Skurdahl, Assistant Washington County Counsel appeared on behalf of USA. She complimented the Department staff for their efforts on this technically difficult subject and the short time frame in which it was accomplished. They believed the Department had listened during the rulemaking process to the concerns of testifiers and was pleased the new version of the rules addressed the technical and economic feasibility questions. Ms. Skurdahl said they understood the proposed study would include the entire Tualatin Basin and was hopeful that any studies, computer models, etc. would also be applicable to other areas of the state to be addressed in the future.

USA also was concerned about 340-41-150(1) in that it appeared to them to allow for enforcement action after three samples were taken. They felt that it implied that immediate control actions would be taken on USA.

Ms. Skurdahl said they would appreciate knowing what was in store for the rest of the state's water bodies explaining that this was the Commission's first bite at the algae problem and the Department has proposed a two-year study of the Tualatin Basin. However, the Department had not yet said anything about the rest of the state except for proposing standards.

Chairman Petersen asked if USA was feeling singled out in this process. Mr. Krahmer replied that they just did not want to be treated unfairly. The way the rule can be interpreted was that the Department could take samples, identify high chlorophyll a levels, and declare a nonattainment area. USA was concerned that if the Tualatin was declared in nonattainment, it would have a detrimental effect on economic development. Assuming a grant was not received for the study, he continued, the area could be in nonattainment for some years. Chairman Petersen said he understood USA's concerns, but the Department had to start somewhere and the original question about nuisance algae growths came from people concerned about the Tualatin basin. He said the Commission and the Department were not trying to treat any area differently and were trying to be as reasonable as possible. Mr. Krahmer appreciated Chairman Petersen's comments.

Mark Pilliod, City of Tualatin, had similar concerns to the City of Portland. He asked that the language in 340-41-150(1) be eliminated. He said that preliminary reports indicate that the standard has already

been met or exceed in some water bodies. Mr. Pilliod did not think Mr. Charles was being realistic in advocating zero discharge. By doing so the Department would be in a position of not granting permits to a wide range of sources from small farmers to industry.

Mr. Pilliod supported the City of Portland's suggested rule changes and submitted written testimony for the record.

David Abraham, Clackamas County Department of Utilities (collects and treats waste from the Tri-Cities Service District, Clackamas County District #1 and the City of Happy Valley in the future), listened to all hearing testimony and heard that chlorophyll a was not a precise standard but a tool that might suggest there is a problem, and at some level that tool could be used as a screening mechanism to establish priority on where most urgent problems are in the State so every water body would not have to be studied. They supported the City of Portland amendments. He said it was important to determine if there is a problem, what is causing it, and it is economically feasible to fix the problem. He did not want to see a moratorium similar to that in the late 1970's on sewage treatment facilities.

Mr. Abraham said they accepted the responsibility of taking the regulations to the public and getting support for financing. He stressed using chlorophyll a as a triggering mechanism, but not a standard.

Cyndy Mackey, Northwest Environmental Defense Center was concerned that the standard would just go into a study mode and the problem would keep getting worse. She agreed with Mr. Charles that once a problem was identified it should not be allowed to become worse while the problem was studied.

Ms. Mackey said the Northwest Environmental Defense Center felt the Tualatin had already been studied enough and the Department should know what the situation is. She said the Clean Water Act did not look at economic feasibility. Ms. Mackey said they would still support the original alternative 2, but as an alternative they would support Mr. Charles.

Chairman Petersen asked if Ms. Mackey would propose the standard be applied to current facilities. Ms. Mackey replied it would be her preference to not allow any additions to current discharge limits. Chairman Petersen asked if this would not place an unreasonable burden on a source if, after a study was completed, it was found another source was responsible for the problem. Ms. Mackey commented Chairman Petersen could argue that. However, they would be happy to deal with new sources as Mr. Charles suggested.

John Atkins, City of Beaverton, also agreed with the City of Portland amendments and comments made by USA. He said the standards as now proposed mitigated a number of the original concerns, provided greater

flexibility, eliminated alternative 2, included new language acknowledging that control strategies should be technically and economically feasible, and acknowledged that some water bodies exceeded the standards due to natural conditions.

John Charles and Andy Schaedel then returned to the Commission and started working on suggested amendments. Chairman Petersen said he was not comfortable with drafting by committee and suggested the Commission give the Department policy direction and ask that amendments be brought back. The Commission indicated agreement, saying they did not want to prolong the process unnecessarily. The Commission offered the following guidance in amending the rules:

1. Disregard alternative 2.
2. Agree to City of Portland's proposed language that no enforcement action or moratorium action be taken until the site-specific study has been completed.
3. In regard to John Charles' issue on new sources, agreed to not intentionally make a problem worse. Commissioner Denecke clarified this would apply to new sources, not additional connections to present sources. However, zero discharge would not be the standard.

Chairman Petersen asked if any modifications would have to be taken back to public hearing. Michael Huston, Assistant Attorney General, replied that another public hearing would not be necessary.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill and passed unanimously that this matter be tabled.

AGENDA ITEM P: Proposed Adoption of Notification Rules for Underground Storage Tanks.

This item was withdrawn from the agenda prior to the meeting.

AGENDA ITEM Q: Proposed Adoption of Hazardous Waste Management Fees for Superfund Cleanup.

As a result of 1985 legislative action, the Department was directed to collect a hazardous waste management fee of \$10 per dry weight ton from all hazardous waste incinerator and disposal site operators. The fee program is to begin January 1, 1986. The monies collected will be used to provide the state match on federally funded Superfund projects.

One major issue was raised during public hearings, that is, how to define dry weight ton? The law directs the Department to collect the fee in the same manner as provided in the original Superfund law. Through contact with the U.S. Environmental Protection Agency (EPA) in Washington D.C., the Department has determined that neither EPA nor the Federal Internal Revenue Service (IRS) ever defined how to calculate dry weight ton.

In fact, the Department was informed that EPA never enforced the tax requirement because of its inability to define a calculation formula. In the absence of federal guidance the Department is proposing to calculate the fee based on measured weight in tons at time of receipt. This approach is also consistent with information provided to the 1985 Legislature upon which revenue projections were based. Firms to be adversely impacted by the Department's approach are those that ship water based materials such as acid, caustics or sludges that are principally water.

Director's Recommendation

Based on the summation in the staff report, it is recommended that the Commission adopt rule OAR 340-105-120 as proposed in Attachment III to the staff report.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM R: Proposed Rules: Open Burning of Solid Waste at Disposal Sites (OAR 340-61-015 and 340-61-040(2))

At the January 25, 1985 EQC meeting, the Commission authorized the Department to hold public hearings on proposed rules relating to open burning of solid waste at disposal sites. The staff report outlines the results of the public hearings, a Department response to public comments, and proposes a recommendation to the Commission. Unlike most rule actions, the Department is requesting that the rule not be adopted and that the Commission concur that open burning dumps can be more efficiently regulated by use of the variance procedure.

Director's Recommendation

Based on the summation in the staff report, it is recommended that the Commission decline to adopt the proposed rules. It is also recommended that staff be instructed to pursue option two in the "Alternatives and Evaluation" section of the staff report and contact the operators presently open burning at disposal sites and indicate the need for the submissions required to obtain a variance.

Commissioner Bishop asked how many variances would be granted. Director Hansen replied that there were now a number of open burning dumps, and the Department would expect that some would stop burning, some would upgrade to landfills and some would continue to burn. The Department would like to stop open burning but in some cases that may lead to indiscriminate dumping. Director Hansen noted that the risks were outlined in the staff report.

Chairman Petersen said he was troubled with the number of open burning dumps being permitted to continue in violation of their permit conditions. Director Hansen replied that that was why this rulemaking process was originally begun. After much debate within the Department, Director Hansen said it was decided it was easier to accomplish the objective by variance rather than rule.

Chairman Petersen was concerned about the perception from the regulated community when the Department strictly enforces permit limits on some sources but not others. Director Hansen said that the Department would expect to move ahead with the currently open burning dumps and would expect them to either comply with their permit conditions or request a variance.

Chairman Petersen asked how the variances would be enforced. Michael Downs, Administrator of the Department's Hazardous and Solid Waste Division, replied that enforcement would depend on the variance conditions. If the variance was to allow open burning with agreement to certain other conditions, then the Department would expect compliance with the variance. Mr. Downs said that if open burning was completely stopped as the regulations require, the result would be a worse environmental alternative and a bigger problem than open burning that of indiscriminate dumping. Or it may result in material still being placed in the dump, but no management. Most of these dumps are in small jurisdictions that do not have the money to operate sanitary landfills. In some cases the counties have stepped in, but in other cases they have not. In response to Chairman Petersen, Mr. Downs said the Department field staff would be checking the dumps to be sure they were in compliance with their variance.

It was MOVED by Commissioner Denecke, seconded by Commissioner Bishop and passed unanimously that the Director's Recommendation be approved.

AGENDA ITEM S: Proposed adoption of revision to rules relating to the "Opportunity to Recycle" (OAR 340-60-025 and OAR 340-60-030) creating a West Linn Wasteshed

The City of West Linn is presently a part of the Clackamas wasteshed. A wasteshed is defined as an area of the state within which to develop a common recycling program.

Since 1983, the City of West Linn has developed a comprehensive recycling program which has achieved 40-50% participation and is making progress toward meeting its solid waste reduction goal. The program includes:

- Free weekly curbside collection of recyclable materials.
- Recycling at multi-family units.
- Yard debris collection and processing for composting.
- Extensive community and in-school education and promotion activities.
- Official commitment, including resources and staff support.
- A garbage collection rate structure which encourages and supports recycling.

The City of West Linn has requested designation as a separate wasteshed so that its program can be evaluated independently and serve as a model for other communities to look at to see how a successful recycling program can be accomplished.

Director's Recommendation

Based on the summation in the staff report, the Director recommends that the Commission adopt the proposed rule changes for OAR Chapter 340, Division 60, Sections -025 and -030, which would designate the City of West Linn as an independent wasteshed and identify the principal recyclable materials in the West Linn wasteshed.

Ed Druback, City of West Linn, commented they were hoping to create greater communication between cities so they could help other jurisdictions promote recycling. Chairman Petersen asked why the West Linn program was so successful. Mr. Druback replied that they had total community involvement, a garbage hauler that was very much behind the program and the City promoted the program. Commissioner Brill asked if the program paid for itself and Mr. Druback replied that it did not as yet. In response to Chairman Petersen, Mr. Druback said West Linn had a population of 12,000.

Chairman Petersen told Mr. Druback the Commission appreciated West Linn's leadership role in recycling.

Commissioner Bishop applauded West Linn's efforts and MOVED approval of the Director's Recommendation. The motion was seconded by Commissioner Brill and passed unanimously.

AGENDA ITEM T: Request for an extension of a variance from OAR 340-25-315(1)(b), veneer dryer emission limits, for Leading Plywood Corporation, Corvallis

Leading Plywood Corporation, Corvallis, is requesting variance for an additional time extension for adding emission controls to one of their two veneer dryers. On November 2, 1984, the Commission granted a variance which required both veneer dryers to be in compliance by January 1, 1986.

Problems during initial start-up of the new type of emission control device on the first dryer had delayed the company from purchasing and installing the second unit. The company now states that funds will not be available for purchase of this unit until July 1986. They are requesting that the final compliance date be extended to December 1, 1986.

Director's Recommendation

Based on the findings in the summation in the staff report, it is recommended that the Commission grant a variance to Leading Plywood Corporation for OAR 340-25-315(1)(b), Veneer Dryer Emission Limits, for the Prentice veneer dryer with increments of progress and a final compliance date as follows:

1. By no later than July 1, 1986, issue purchase orders for a second GeoEnergy ARS to be installed the Prentice veneer dryer;
2. By no later than July 1, 1986, submit to DEQ a Notice of Intent to Construct Application with plans and updated modifications to the GeoEnergy ARS to be installed on the Prentice veneer dryer.
3. By no later than October 1, 1986, initiate installation of emission control equipment.
4. By no later than November 1, 1986, complete the installation of emission control equipment and/or on-site construction.
5. By no later than December 1, 1986, conduct and submit the data and results of a particulate source test on the Prentice veneer dryer emission stack (subject to waiver by the Department upon evaluation of test results from Moore dryer).

Chairman Petersen asked to what extent the Department talked with the bank to verify information submitted by the applicant for a variance. Director Hansen replied that generally the Department relies on the applicant with some level of verification. Frankly, Director Hansen said, the Department needs to do more in this regard but it does not have the staff capability, nor does the Department really know the

right questions to ask. Chairman Petersen said that verification of the financial situation was an important factor in this type of decision and it was not reasonable to totally rely on the company for this information. Some type of independent analysis needs to be made before a variance is granted. He suggested this might be the subject of a legislative concept.

In this case, Director Hansen, said the Department did extensive talking with the bank and are assured of the Company's financial situation.

Noting he was impressed that any plywood company would be willing to spend this money for pollution control equipment in these difficult economic times, Commissioner Denecke MOVED, that the Director's Recommendation be approved. Commissioner Brill seconded and the motion was passed unanimously.

City of Klamath Falls Petition

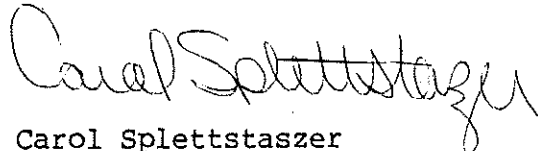
Noting the Commission had received a petition for rulemaking from the City of Klamath Falls, Chairman Petersen asked if the Commission needed to act on this petition at this meeting. Director Hansen said the Commission did not need to act at this time, and the Department would be either seeking a time extension, or asking the Commission to act by conference call later on.

This ended the formal meeting.

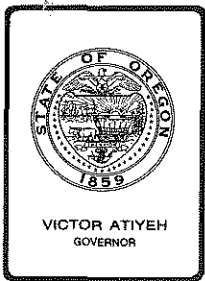
LUNCH MEETING

During lunch the Commission continued their discussion of preliminary legislative concepts.

Respectfully submitted,



Carol Splettstaszer
EQC Assistant



Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. B, March 14, 1986, EQC Meeting
December 1985 and January 1986 Program Activity Report

Discussion

Attached is the December 1985 and January 1986 Program Activity Report.

ORS 468.325 provides for Commission approval or disapproval of plans and specifications for construction of air contaminant sources.

Water Quality and Solid Waste facility plans and specifications approvals or disapprovals and issuance, denials, modifications and revocations of air, water and solid waste permits are prescribed by statutes to be functions of the Department, subject to appeal to the Commission.

The purposes of this report are:

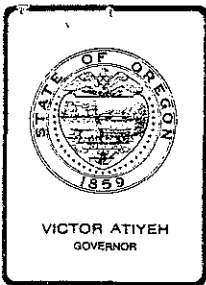
1. To provide information to the Commission regarding the status of reported activities and an historical record of project plan and permit actions;
2. To obtain confirming approval from the Commission on actions taken by the Department relative to air contaminant source plans and specifications; and
3. To provide logs of civil penalties assessed and status of DEQ/EQC contested cases.

Recommendation

It is the Director's recommendation that the Commission take notice of the reported program activities and contested cases, giving confirming approval to the air contaminant source plans and specifications.

Fred Hansen

SChew:y
MD26
229-6484
Attachment



Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

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DEPARTMENT OF ENVIRONMENTAL QUALITY

Monthly Activity Report

December 1985 and January 1986

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DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality, Water Quality,
Hazardous and Solid Waste Division
(Reporting Unit)

December 1985
(Month and Year)

SUMMARY OF PLAN ACTIONS

	Plans Received		Plans Approved		Plans Disapproved		Plans Pending
	Month	FY	Month	FY	Month	FY	
<u>Air</u>							
Direct Sources	6	39	9	39	0	0	14
Small Gasoline Storage Tanks Vapor Controls	-	-	-	-	-	-	-
Total	6	39	9	39	0	0	14
<u>Water</u>							
Municipal	12	85	7	93	0	3	29
Industrial	1	44	1	47	0	0	7
Total	13	129	8	140	0	3	36
<u>Solid Waste</u>							
Gen. Refuse	1	24	-	15	-	-	33
Demolition	1	2	-	-	-	-	3
Industrial	2	15	1	8	-	-	19
Sludge	-	1	-	-	-	-	1
Total	4	42	1	23	-	-	56
<u>Hazardous Wastes</u>	-	5	-	5	-	-	-
<u>GRAND TOTAL</u>	23	215	18	207	0	3	106

DEPARTMENT OF ENVIRONMENTAL QUALITY
 AIR QUALITY DIVISION
 MONTHLY ACTIVITY REPORT
 DIRECT SOURCES
 PLAN ACTIONS COMPLETED

COUNTY	NUMBER	SOURCE	PROCESS DESCRIPTION	DATE OF ACTION	ACTION
CURRY	085	SOUTH COAST LUMBER CO.	SCRUBBER INSTALLATION	11/27/85	APPROVED
LINN	089	GENOSE WOOD PRESERVING CO	INSTALL SCRUBBER	07/25/85	APPROVED
CROCK	109	CHWOOD LUMBER COMPANY	PLANER/CYCLONE/FAN/PIPES	12/12/85	APPROVED
CLATSOP	117	ASTORIA PLYWOOD CORP.	WET SCRUBBER	11/25/85	APPROVED
LINN	118	TELEDYNE WAH CHANG	INSTALL HEATED BAGHOUSE	12/11/85	APPROVED
MULTNOMAH	119	HACKER SILTRONIC CORP	ARSINE GAS DISCHARGE	11/27/85	APPROVED
WASCO	123	L J HOWARD CO INC.	CYCLONE AND BAGHOUSE	11/25/85	APPROVED
WASCO	124	DJPAFLAKE CO	REVISE EXT PRESS VENT STMS	12/02/85	APPROVED
WASCO	929	SMITH'S WAREHOUSE	BAG FILTERING SYSTEM	03/11/85	APPROVED

TOTAL NUMBER QUICK LOOK REPORT LINES 9

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division
(Reporting Unit)

December, 1985
(Month and Year)

SUMMARY OF AIR PERMIT ACTIONS

	Permit Actions Received		Permit Actions Completed		Permit Actions Pending	Sources Under Permits	Sources Reqr'g Permits
	Month	FY	Month	FY			
<u>Direct Sources</u>							
New	1	14	6	21	13		
Existing	1	10	2	8	14		
Renewals	13	61	22	79	99		
Modifications	<u>0</u>	<u>5</u>	<u>1</u>	<u>28</u>	<u>6</u>		
Total	15	90	31	136	132	1301	1328
<u>Indirect Sources</u>							
New	1	11	2	15	2		
Existing	0	0	0	0	0		
Renewals	0	0	0	0	0		
Modifications	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>		
Total	1	11	2	15	2	<u>247</u>	<u>249</u>
<u>GRAND TOTALS</u>	16	101	33	151	134	1548	1577

Number of
Pending Permits

Comments

31	To be reviewed by Northwest Region
21	To be reviewed by Willamette Valley Region
19	To be reviewed by Southwest Region
1	To be reviewed by Central Region
8	To be reviewed by Eastern Region
16	To be reviewed by Program Operations Section
33	Awaiting Public Notice
<u>3</u>	Awaiting end of 30-day Public Notice Period
132	

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MONTHLY ACTIVITY REPORT
DIRECT SOURCES
PERMITS ISSUED

COUNTY	SOURCE	PERMIT NUMBER	APPL. RECEIVED	STATUS	DATE ACHIEVED	TYPE APPL. PSEL
MARION	PORTLAND GENERAL ELECTRIC	24	2318	11/23/84	PERMIT ISSUED	11/26/85 RNW Y
CLACKAMAS	PUB PAPER CO-MOLALLA	03	1791	04/24/85	PERMIT ISSUED	11/27/85 RNW Y
CLACKAMAS	DICKS CONCRETE SERVICE	03	2501	07/23/85	PERMIT ISSUED	11/27/85 RNW N
COOS	TWIN CITY CMTRY ASS'N INC	06	0104	08/06/85	PERMIT ISSUED	11/27/85 NEW N
LINCOLN	PACIFIC COMMUNITIES HOSP.	21	0038	07/30/85	PERMIT ISSUED	11/27/85 RNW N
MULTNOMAH	ROSS ISLAND S&G N RIVER	26	1946	06/14/85	PERMIT ISSUED	11/27/85 RNW N
MULTNOMAH	STAUFFER CHEMICAL CO.	26	2548	11/08/84	PERMIT ISSUED	11/27/85 RNW Y
WASHINGTON	VAN DOREN RED-E-MIX	34	2034	08/19/85	PERMIT ISSUED	11/27/85 RNW N
PORT.SOURCE	ACME CONCRETE CO	37	0077	10/31/85	PERMIT ISSUED	11/27/85 RNW N
CLACKAMAS	OREGON REDIMIX CO INC	03	1922	06/26/85	PERMIT ISSUED	12/06/85 RNW N
CLACKAMAS	WESTERN PACIFIC CONST CO	03	2639	12/11/84	PERMIT ISSUED	12/06/85 RNW Y
COLUMBIA	TIDE CREEK ROCK INC	05	2586	10/18/84	PERMIT ISSUED	12/06/85 EXT N
MULTNOMAH	ROGERS CONSTRUCTION CO	26	2457	06/25/85	PERMIT ISSUED	12/06/85 RNW Y
WASHINGTON	PROGRESS QUARRIES INC	34	2619	06/25/85	PERMIT ISSUED	12/06/85 RNW Y
PORT.SOURCE	D AND D CRUSHING INC	37	0339	08/16/85	PERMIT ISSUED	12/06/85 NEW Y
PORT.SOURCE	DAVISON'S READY-MIX	37	0343	06/28/85	PERMIT ISSUED	12/06/85 NEW N
PORT.SOURCE	BEAVER ST READY MIX INC	37	0345	08/19/85	PERMIT ISSUED	12/06/85 NEW N
CLATSOP	BAYVIEW TRANSIT MIX INC.	04	0045	10/17/85	PERMIT ISSUED	12/10/85 RNW N
HOOD RIVER	HANEL LUMBER CO.	14	0009	12/14/84	PERMIT ISSUED	12/10/85 RNW Y
KLAMATH	MERLE WEST MEDICAL CENTER	18	0056	10/18/85	PERMIT ISSUED	12/10/85 RNW N
MULTNOMAH	PROVIDENCE HOSPITAL	26	1804	11/06/85	PERMIT ISSUED	12/10/85 RNW N
MULTNOMAH	NABISCO INC-PORTLAND BKRY	26	2968	10/31/85	PERMIT ISSUED	12/10/85 RNW N
BAKER	ELLINGSON LUMBER COMPANY	01	0003	04/04/85	PERMIT ISSUED	12/24/85 RNW Y
BENTON	EVANS PRODUCTS BSP	02	2515	05/04/83	PERMIT ISSUED	12/24/85 RNW Y
CLATSOP	ASTORIA PLYWOOD CORP.	04	0014	06/01/84	PERMIT ISSUED	12/24/85 RNW Y
DESCHUTES	BEND AGGREGATE & PVING	09	0026	00/00/00	PERMIT ISSUED	12/24/85 MOD Y
JACKSON	DOUBLE DEE LUMBER CO	15	0189	07/22/85	PERMIT ISSUED	12/24/85 NEW N
LINN	OSMOSE WOOD PRESERVING CO	22	6010	06/03/85	PERMIT ISSUED	12/24/85 NEW N
MARION	VIESKO REDIMIX INC	24	1283	07/01/85	PERMIT ISSUED	12/24/85 RNW N
WASHINGTON	DURAMETAL CORP	34	1882	12/13/84	PERMIT ISSUED	12/24/85 RNW Y
PORT.SOURCE	FERGUSON LOGGING CO	37	0344	08/27/85	PERMIT ISSUED	12/24/85 EXT Y

TOTAL NUMBER QUICK LOOK REPORT LINES

31

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division

(Reporting Unit)

December, 1985

(Month and Year)

PERMIT ACTIONS COMPLETED

* County	* Name of Source/Project	* Date of	* Action	*
*	* /Site and Type of Same	* Action	*	*
*	*	*	*	*

Indirect Sources

Multnomah	Port Center Parking on Swan Island, 200 Spaces File No. 26-8518	12/11/85	Final Permit Issued
Multnomah	Sheraton Inn - Portland Airport, 1,202 Spaces File No. 26-8519	12/02/85	Final Permit Issued

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division December 1985
(Reporting Unit) (Month and Year)

PLAN ACTIONS COMPLETED 8

* County	* Name of Source/Project	* Date	* Status	*
*	* /Site and Type of Same	* Received	*	*
*	*	*	*	*

INDUSTRIAL WASTE SOURCES 1

Linn	Teledyne Wah Chang Albany Uranium Removal Process Albany	12-12-85	Approved
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DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

<u>Water Quality</u>	<u>December 1985</u>
(Reporting Unit)	(Month and Year)

PLAN ACTIONS COMPLETED 8

* County	* Name of Source/Project	* Date of	* Action	*
*	* /Site and Type of Same	* Action	*	*
*	*	*	*	*

MUNICIPAL WASTE SOURCES 7

Clackamas	Wilsonville Town Center Loop/Parkway Ave	12-6-85	Provisional Approval
Jefferson	Madras William Hoffman Property (US 97)	12-6-85	Provisional Approval
Josephine	Harbeck-Fruitdale S.D. Dr. Vernon Curtis Extension (Curtis Drive)	12-6-85	Provisional Approval
Douglas	RUSA Wilbur Sanitary Sewer Extension	12-10-85	Provisional Approval
Clackamas	Lake Oswego Village on the Lake Collection & Pump Stations	12-15-85	Comments to Engineer and City
Columbia	GasLite Deli On-site Disposal System (2000 gpd)	12-16-85	Comments to NWR and Designer
Klamath	Treadwest Industrial Complex On-site Disposal System (3000 gpd)	12-24-85	Comments to Central Region and Engineer

7

SOURCE CATEGORY & PERMIT SUBTYPE	NUMBER OF APPLICATIONS FILED						NUMBER OF PERMITS ISSUED						APPLICATIONS PENDING PERMIT ISSUANCE (1)			CURRENT TOTAL OF ACTIVE PERMITS		
	MONTH			FISCAL YEAR			MONTH			FISCAL YEAR			NPDES	WPCF	GEN	NPDES	WPCF	GEN
	NPDES	WPCF	GEN	NPDES	WPCF	GEN	NPDES	WPCF	GEN	NPDES	WPCF	GEN						
DOMESTIC																		
NEW	0	1	0	2	10	0	0	3	0	1	7	1	4	12	0			
RW	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0			
RWO	1	1	0	13	3	0	0	0	0	5	6	0	28	7	0			
MW	0	0	0	1	0	0	0	0	0	2	0	0	2	1	0			
MWO	0	1	0	8	1	0	0	0	0	4	0	0	7	2	0			
TOTAL	1	3	0	24	14	0	0	3	0	12	13	1	42	22	0	237	150	70
INDUSTRIAL																		
NEW	0	0	0	1	7	14	0	1	3	0	8	14	4	7	4			
RW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
RWO	4	2	0	12	11	0	0	0	0	15	9	0	28	12	0			
MW	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0			
MWO	0	0	0	5	2	1	1	0	1	7	1	1	4	1	0			
TOTAL	4	2	0	18	20	15	1	1	4	22	18	15	37	20	4	169	141	295
AGRICULTURAL																		
NEW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
RW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
RWO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
MWO	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0			
TOTAL	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2	11	59
GRAND TOTAL	5	5	0	42	35	15	1	4	4	34	32	16	79	42	4	408	302	424

1) DOES NOT INCLUDE APPLICATIONS WITHDRAWN BY THE APPLICANT, APPLICATIONS WHERE IT WAS DETERMINED A PERMIT WAS NOT NEEDED, AND APPLICATIONS WHERE THE PERMIT WAS DENIED BY DEQ.

IT DOES INCLUDE APPLICATIONS PENDING FROM PREVIOUS MONTHS AND THOSE FILED AFTER 31-DEC-85.

NEW - NEW APPLICATION
RW - RENEWAL WITH EFFLUENT LIMIT CHANGES
RWO - RENEWAL WITHOUT EFFLUENT LIMIT CHANGES
MW - MODIFICATION WITH INCREASE IN EFFLUENT LIMITS
MWO - MODIFICATION WITHOUT INCREASE IN EFFLUENT LIMITS

NOTE: IN ADDITION, 207 NPDES GENERAL PERMITS WERE RENEWED DEC 20.

CAT	PERMIT NUMBER	TYPE	SUB- TYPE	SOURCE ID	LEGAL NAME	CITY	COUNTY/REGION	DATE ISSUED	DATE EXPIRES
<u>General: Cooling Water</u>									
IND	100	GEN01	NEW	100110	BIOMASS-ONE OPERATING COMPANY, INC.	WHITE CITY	JACKSON/SWR	04-DEC-85	31-DEC-85
IND	100	GEN01	NEW	100109	MCCLOSKEY VARNISH COMPANY OF THE NORTHWEST	PORTLAND	MULTNOMAH/NWR	09-DEC-85	31-DEC-85
<u>General: Log Ponds</u>									
IND	400	GEN04	MWO	15822	FRERES LUMBER CO. INC.	IDANHA	MARION/WVR	06-DEC-85	31-DEC-85
<u>General: Gravel Mining</u>									
IND	1000	GEN10	NEW	100111	ANGELL BROS., INC.	PORTLAND	MULTNOMAH/NWR	05-DEC-85	31-DEC-86
<u>NPDES</u>									
IND	3837	NPDES	MWO	81600	PACIFIC WESTERN EXTRUDED PLASTICS COMPANY	EUGENE	LANE/WVR	10-DEC-85	31-MAR-89
<u>WPCF</u>									
IND	100134	WPCF	NEW	100097	JASPER WOOD TREATING, INC.	JASPER	LANE/WVR	10-DEC-85	30-NOV-90
DOM	100135	WPCF	NEW	100106	SPONAUGLE, NILE & MARLENE		JACKSON/SWR	26-DEC-85	31-DEC-90
DOM	100136	WPCF	NEW	100080	BLAIR, GERALD A.	SCAPPOOSE	COLUMBIA/NWR	26-DEC-85	31-OCT-90

CAT	PERMIT NUMBER	TYPE	SUB- TYPE	SOURCE ID	LEGAL NAME	CITY	COUNTY/REGION	DATE ISSUED	DATE EXPIRES
DOM	100137	WPCF	NEW	100086	TROUTMAN INVESTMENT COMPANY	EUGENE	LANE/WVR	26-DEC-85	31-DEC-90

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Hazardous and Solid Waste Division
(Reporting Unit)

December 1985
(Month and Year)

SUMMARY OF SOLID AND HAZARDOUS WASTE PERMIT ACTIONS

	Permit Actions Received		Permit Actions Completed		Permit Actions Pending	Sites Under Permits	Sites Reqr'g Permits
	Month	FY	Month	FY			
<u>General Refuse</u>							
New	-	3	-	3	1		
Closures	-	4	-	2	7		
Renewals	5	32	2	14	49		
Modifications	1	8	2	61	3		
Total	6	47	4	80	60	179	179
<u>Demolition</u>							
New	-	-	-	-	-		
Closures	-	-	-	-	2		
Renewals	-	1	-	1	1		
Modifications	1	1	-	1	1		
Total	1	2	-	2	4	12	12
<u>Industrial</u>							
New	2	10	2	7	6		
Closures	-	-	-	3	2		
Renewals	1	19	-	5	25		
Modifications	-	-	-	1	-		
Total	3	29	2	16	33	104	104
<u>Sludge Disposal</u>							
New	-	1	-	-	1		
Closures	-	-	-	-	-		
Renewals	-	1	-	-	1		
Modifications	-	-	-	-	-		
Total	-	2	-	-	2	16	16
<u>Hazardous Waste</u>							
New	-	1	-	-	9		
Authorizations	43	379	43	379	-		
Renewals	-	-	-	-	1		
Modifications	-	-	-	-	-		
Total	43	380	43	379	10	14	19
<u>GRAND TOTALS</u>	53	460	49	477	109	325	330

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Hazardous and Solid Waste Division
(Reporting Unit)

December 1985
(Month and Year)

PERMIT ACTIONS COMPLETED

* County	* Name of Source/Project * /Site and Type of Same	* Date of * Action	* Action	*
Polk	Boise Cascade, Independence Existing facility	12-2-85	Permit renewed.	*
Klamath	Bly Landfill Existing facility	12-13-85	Permit renewed.	*
Lane	Cottage Grove Landfill Existing facility	12-13-85	Permit amended.	*
Lane	Creswell Landfill Existing facility	12-13-85	Permit amended.	*
Lane	Veneta Transfer Station Existing facility	12-13-85	Permit renewed.	*
Clackamas	Vanport Manufacturing New woodwaste site.	12-17-85	Letter authorization issued.	*

SB5351.D

MAR.6 (5/79)

DATE	WASTE TYPE	SOURCE	DISPOSE NOW	DISPOSE ANNUALLY
09-DEC-85	SOIL & GRAVEL CONTAMINATED WITH 2,4-D	RCRA SPILL CLEANUP	40 CUBIC YARDS	0
18-DEC-85	PCB MIXTURE	HARDWOOD VENEER & PLYWOOD	0	10 DRUMS
18-DEC-85	PCB TRANSFORMER OIL	HARDWOOD VENEER & PLYWOOD	0	10 DRUMS

3 Request(s) approved for generators in Montana

12-DEC-85	PAINT WASTE MIXTURE	OTHER ELECTRONIC COMPONENTS	0	220 CUBIC YARDS
16-DEC-85	CLARIFIER FERROUS SULFIDE SOLUTION	AIRCRAFT	0	30,000 GALLONS
17-DEC-85	NITRIC ACID NICKEL STRIP	HAND & EDGE TOOLS	0	2000 GALLONS
17-DEC-85	WOOD FINES CONTAMINATED WITH PENTACHLOROPHENATE	WOOD PRESERVING	4 DRUMS	0
17-DEC-85	CONCENTRATED WASTE CHROMIC ACID	SEMICONDUCTORS	0	2400 GALLONS
17-DEC-85	LAB PACK TOXIC	COLLEGES & UNIVERSITIES	1 DRUM	0
17-DEC-85	NICKEL PLATING SLUDGE	SPORTING & ATHLETIC GOODS	0	5 DRUMS (55 GALLONS EACH)
18-DEC-85	CCA PRESERVATIVE TANK BOTTOM RESIDUE	WOOD PRESERVING	0	30 DRUMS
18-DEC-85	TITANIUM DIOXIDE	NON-SUPERFUND SITE CLEANUP	1 DRUM	0
18-DEC-85	BARIUM CARBONATE	NON-SUPERFUND SITE CLEANUP	1 DRUM	0
18-DEC-85	POTASH	NON-SUPERFUND SITE CLEANUP	1 DRUM	0

11 Request(s) approved for generators in Oregon

06-DEC-85	WATER WITH TRACE OF CADMIUM & LEAD	FLAT GLASS	30 DRUMS	0
06-DEC-85	CERAMIC PAINT SLUDGE EMPTY 5 GALLON CONTAINERS	FLAT GLASS	520 CUBIC YARDS	0

DATE	WASTE TYPE	SOURCE	DISPOSE NOW	DISPOSE ANNUALLY
09-DEC-85	WASTE FROM LUST PROGRAM - SOIL & DEBRIS CONT. WITH DIESEL, GASOLINE	NON-RCRA SPILL CLEANUP	0	2000 CUBIC YARDS
09-DEC-85	WASTE FROM LUST PROGRAM - SOIL & DEBRIS CONT. WITH DIESEL, GASOLINE	NON-RCRA SPILL CLEANUP	0	2000 CUBIC YARDS
09-DEC-85	WASTE FROM LUST PROGRAM - SOIL & DEBRIS CONT. WITH DIESEL, GASOLINE	NON-RCRA SPILL CLEANUP	0	2000 CUBIC YARDS
09-DEC-85	AMMONIUM BIFLUORIDE	DEPARTMENT OF DEFENSE	0	15 DRUMS (55 GALLONS EACH)
09-DEC-85	THIOUREA	DEPARTMENT OF DEFENSE	0	20 DRUMS (55 GALLONS EACH)
09-DEC-85	PAINT REMOVER, LIQUID	DEPARTMENT OF DEFENSE	0	20 DRUMS (55 GALLONS EACH)
09-DEC-85	SODIUM DICHROMATE	DEPARTMENT OF DEFENSE	0	15 DRUMS (55 GALLONS EACH)
09-DEC-85	POTASSIUM CHROMATE	DEPARTMENT OF DEFENSE	0	15 DRUMS (55 GALLONS EACH)
09-DEC-85	FLUOBORIC ACID	DEPARTMENT OF DEFENSE	0	10 DRUMS (55 GALLONS EACH)
09-DEC-85	ETHYLENEDIAMINE TETRA ACETIC ACID (EDTA)	DEPARTMENT OF DEFENSE	0	50 DRUMS (55 GALLONS EACH)
09-DEC-85	POTASSIUM HYDROXIDE SOLID	DEPARTMENT OF DEFENSE	0	10 DRUMS (55 GALLONS EACH)
09-DEC-85	BARIUM CHLORIDE	DEPARTMENT OF DEFENSE	0	3 DRUMS (55 GALLONS EACH)
09-DEC-85	COMPOUND RUST REMOVING	DEPARTMENT OF DEFENSE	0	10 DRUMS (55 GALLONS EACH)
09-DEC-85	PHENOL	DEPARTMENT OF DEFENSE	0	2 DRUMS (55 GALLONS EACH)
09-DEC-85	NICKEL SULFATE	DEPARTMENT OF DEFENSE	0	2 DRUMS (55 GALLONS EACH)
09-DEC-85	POTASSIUM DICHROMATE	DEPARTMENT OF DEFENSE	0	15 DRUMS (55 GALLONS EACH)
16-DEC-85	WASTE FROM UST PROGRAM - SOIL & DEBRIS CONT. WITH DIESEL, GASOLINE.	AIRCRAFT	0	2000 CUBIC YARDS

DATE	WASTE TYPE	SOURCE	DISPOSE NOW	DISPOSE ANNUALLY
16-DEC-85	WASTE FROM UST PROGRAM - SOIL & DEBRIS CONT. WITH DIESEL, GASOLINE	AIRCRAFT	0	2000 CUBIC YARDS
17-DEC-85	SODIUM BIFLUORIDE	DEPARTMENT OF DEFENSE	0	15 DRUMS (55 GALLONS EACH)
17-DEC-85	SOIL CONTAMINATED WITH CHEVRON THINNER 325	NON-RCRA SPILL CLEANUP	60 DRUMS	0
17-DEC-85	WASTE DISULFOTON MIXTURE, DRY	RCRA SPILL CLEANUP	1 DRUM	0
17-DEC-85	CRUSHED DRUMS CONTAMINATED WITH PCB GREATER THAN 500PPM	ENV. SERVICES CONTRACTORS	0	75,000 CUBIC YARDS
18-DEC-85	NICKEL CHLORIDE	DEPARTMENT OF DEFENSE	0	5 DRUMS
18-DEC-85	AMMONIUM CHLORIDE	DEPARTMENT OF DEFENSE	0	200 DRUMS
18-DEC-85	POLLUTION CONTROL SYSTEM METAL HYDROXIDE SLUDGE	OTHER ELECTRONIC COMPONENTS	0	300 DRUMS

27 Request(s) approved for generators in Washington

41 Requests granted - Grand Total

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Noise Control Program
(Reporting Unit)

December, 1985
(Month and Year)

SUMMARY OF NOISE CONTROL ACTIONS

Source Category	New Actions Initiated		Final Actions Completed		Actions Pending	
	Mo	FY	Mo	FY	Mo	Last Mo
Industrial/ Commercial	9	65	6	45	201	198
Airports			1	5	1	1

NOISE COMPLAINT SUMMARY

1985

Category	Number of Complaints	% of 1985 Complaints	% Change from 1984
Industry & Commerce	436	56%	+38%
Motor Vehicles	174	23%	+63%
Racing Events	45	6%	+67%
Airports	26	3%	-35%
Other	<u>92</u>	<u>12%</u>	<u>-40%</u>
TOTAL	773	100%	+20%

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Noise Control Program (Reporting Unit)	December, 1985 (Month and Year)
-------------------------------------------	------------------------------------

FINAL NOISE CONTROL ACTIONS COMPLETED

<u>County</u>	<u>Name of Source and Location</u>	<u>Date</u>	<u>Action</u>
Multnomah	American Red Cross Building, Portland	12/85	In Compliance
Multnomah	Burling Wood Products, NW Multnomah County	12/85	In Compliance
Multnomah	Steam Supply & Rubber Company, Portland	12/85	In Compliance
Washington	Coast Sweeping Service at Washington Square, Tigard	12/85	In Compliance
Polk	Towmotor Corporation Dallas	12/85	In Compliance
Douglas	Brides of Christ Commune, near Riddle	12/85	In Compliance
Douglas	Dillard Fire Station Heliport, Dillard	12/85	Boundary Exception Granted

CIVIL PENALTY ASSESSMENTS
DEPARTMENT OF ENVIRONMENTAL QUALITY
1985

CIVIL PENALTIES ASSESSED DURING MONTH OF DECEMBER, 1985 :

<u>Name and Location of Violation</u>	<u>Case No. & Type of Violation</u>	<u>Date Issued</u>	<u>Amount</u>	<u>Status</u>
Refinishing Services of Oregon, Inc. and James H. Davis, Portland, Oregon	HW-NWR-85-154 Disposed of HW at an unauthorized location.	12/4/85	\$2,500	Default Order & Judgment issued 1/8/86. Judgment filed with county & Revenue 1/22/86.
John A. Sayer & Kenneth Sayer, Brownsville, Oregon	AQ-FB-85-01 Late field burning.	12/27/85	\$750	Paid 1/14/86.
Doug Nulf Junction City, Oregon	AQ-FB-85-02 Late field burning.	12/27/85	\$500	Hearing request & answer filed 1/8/86.
Richard Doerfler Sublimity, Oregon	AQ-FB-85-03 Late field burning.	12/27/85	\$300	Hearing request filed 1/21/86.
Thomas W. Tate Sublimity, Oregon	AQ-FB-85-04 Late field burning.	12/27/85	\$300	Letter received.
Wendell Manning Brownsville, Oregon	AQ-FB-85-05 Late field burning.	12/27/85	\$300	Paid 1/16/86.
Ken Wetgen Halsey, Oregon	AQ-FB-85-06 Late field burning.	12/27/85	\$300	Paid 1/21/86.
Keith March Junction City, Oregon	AQ-FB-85-07 Late field burning.	12/27/85	\$300	In default.
Tom Fox and Floyd Fox Silverton, Oregon	AQ-FB-85-08 Late field burning.	12/27/85	\$300	Response to notice due by 1/30/86.
Marty Johnson Salem, Oregon	AQ-FB-85-09 Late field burning.	12/27/85	\$300	Paid 1/10/86.
Oren Neuschwander Albany, Oregon	AQ-FB-85-10 Field burning during prohibition conditions.	12/27/85	\$318	Paid 1/7/86.

<u>Name and Location of Violation</u>	<u>Case No. & Type of Violation</u>	<u>Date Issued</u>	<u>Amount</u>	<u>Status</u>
Julian & Mark Lafayette Polk County	AQ-FB-85-11 Field burning without a permit.	12/27/85	\$860	Paid 1/17/86.
Mark Smucker & Walter Kropf Harrisburg, Oregon	AQ-FB-85-12 Improper propane flaming of a field.	12/27/85	\$200	Paid 1/10/86.
Carl Ditchen, David Ditchen & Eldon Ditchen dba/Golden Valley Farms Marion County	AQ-FB-85-13 & AQ-FB-85-15 Conducted improper propane flaming of a field, and failed to obtain a fire permit on a second field.	12/27/85	\$500	Response to notice extended to 1/31/86.
Victor Kropf & Samuel Kropf Halsey, Oregon	AQ-FB-85-14 Improper propane flaming of a field.	12/27/85	\$200	Paid 1/7/86.
Walter Johnson Eugene, Oregon	AQ-FB-85-16 Conducted agricultural open burning on a prohibited day.	12/27/85	\$50	Paid 1/23/86.
Manley Thompson Corvallis, Oregon	AQ-FB-85-17 Conducted agricultural open burning on a prohibited day.	12/27/85	\$50	Paid 1/21/86.

December, 1985
DEQ/EQC Contested Case Log

<u>ACTIONS</u>	<u>LAST MONTH</u>	<u>PRESENT</u>
1 Preliminary Issues	4	1
2 Discovery	0	0
3 Settlement Action	5	4
4 Hearing to be scheduled	0	0
5 Hearing scheduled	3	7
6 HO's Decision Due	4	3
7 Briefing	0	0
8 Inactive	<u>5</u>	<u>5</u>
SUBTOTAL of cases before hearings officer.	21	20
9 HO's Decision Out/Option for EQC Appeal	0	2
10 Appealed to EQC	0	0
11 EQC Appeal Complete/Option for Court Review	2	2
12 Court Review Option Taken	1	1
13 Case Closed	<u>4</u>	<u>0</u>
TOTAL Cases	28	25

15-AQ-NWR-81-178 15th Hearing Section case in 1981 involving Air Quality Division violation in Northwest Region jurisdiction in 1981; 178th enforcement action in the Department in 1981.

§ Civil Penalty Amount

ACDP Air Contaminant Discharge Permit

AG1 Attorney General 1

AQ Air Quality Division

AQOB Air Quality, Open Burning

CR Central Region

DEC Date Date of either a proposed decision of hearings officer or a decision by Commission

ER Eastern Region

FB Field Burning

Hrng Rfrl Date when Enforcement Section requests Hearing Section schedule a hearing

Hrngs Hearings Section

NP Noise Pollution

NPDES National Pollutant Discharge Elimination System wastewater discharge permit.

NWR Northwest Region

OSS On-Site Sewage Section

P Litigation over permit or its conditions

Prtys All parties involved

Rem Order Remedial Action Order

Resp Code Source of next expected activity in case

SS Subsurface Sewage (now OSS)

SW Solid Waste Division

SWR Southwest Region

T Litigation over tax credit matter

Transcr Transcript being made of case

Underlining New status or new case since last month's contested case log

WQ Water Quality Division

WVR Willamette Valley Region

December 1985

DEQ/EQC Contested Case Log

Pet/Resp Name	Hrng Rqst	Hrng Rfrl	Hrng Date	Resp Code	Case Type & No.	Case Status
WAH CHANG	04/78	04/78		Prtys	16-P-WQ-WVR-78-2849-J NPDES Permit Modification	Current permit in force. Hearing deferred.
WAH CHANG	04/78	04/78		Prtys	03-P-WQ-WVR-78-2012-J NPDES Permit Modification	Current permit in force. Hearing deferred.
HAYWORTH FARMS, INC., and HAYWORTH, John W.	01/14/83	02/28/83	04/04/84	Resp.	50-AQ-FB-82-09 FB Civil Penalty of \$1,000	EQC affirmed \$1,000 penalty
McINNIS ENT.	06/17/83	06/21/83		Prtys	52-SS/SW-NWR-83-47 SS/SW Civil Penalty of \$500	Hearing deferred pending conclusion of court action.
McINNIS ENTERPRISES, LTD., et al.	09/20/83	09/22/83		Prtys	56-WQ-NWR-83-79 WQ Civil Penalty of \$14,500	Hearing deferred pending conclusion of court action.
McINNIS ENTERPRISES, LTD., et al.	10/25/83	10/26/83		Prtys	59-SS-NWR-83-33290P-5 SS license revocation	Hearing deferred pending conclusion of court action.
CLEARWATER IND., Inc.	10/11/83	10/17/83	<u>01/13/86</u>	Prtys	58-SS-NWR-83-82 SS Civil Penalty of \$1000	<u>Hearing rescheduled.</u>
CLEARWATER IND., Inc.	01/13/84	01/18/84	<u>01/13/86</u>	Prtys	02-SS-NWR-83-103 SS Civil Penalty of \$500	<u>Hearing rescheduled.</u>

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December 1985

DEQ/EQC Contested Case Log

Pet/Resp Name	Hrng Rqst	Hrng Rfrl	Hrng Date	Resp Code	Case Type & No.	Case Status
BIELLENBERG, David	03/28/84	04/05/84	12/11/84	Resp.	09-AQ-FB-83-04 FB Civil Penalty of \$300	EQC reduced penalty to \$50.
TRANSCO Industries, Inc.	06/05/84	06/12/84		Prtys	17-HW-NWR-84-45 HW Civil Penalty of \$2,500	Hearing deferred for settlement action.
TRANSCO Industries, Inc.	06/05/84			Prtys	18-HW-NWR-84-46 HW Compliance Order	Hearing deferred for settlement action.
VANDERVELDE, Roy	06/12/84	06/12/84	08/22/85	<u>Resp.</u>	20-WQ-WVR-84-01 WQ Civil Penalty of \$2,500	<u>Decision Issued 1/10/86.</u>
23 CLEARWATER INDUSTRIES, INC.	10/11/84	10/11/84	<u>01/13/86</u>	Prtys	24-SS-NWR-84-P Sewage Disposal Service License Denial	<u>Hearing rescheduled.</u>
IAVA DIVERSION PROJECT	12/14/84	12/27/84		Prtys	25-WQ-CR-FERC-5205 Hydroelectric plant certification	EQC certification denial appealed to Court of Appeals.
UNITED CHROME PRODUCTS, INC.		02/19/85		Hrgs	02-HW-WQ-WVR-84-158 \$6,000 civil penalty	<u>Decision due.</u>
FUNRUE, Amos	03/15/85	03/19/85	06/20/85	<u>Resp.</u>	05-AQ-FB-84-141 Civil Penalty of \$500	<u>Decision issued 01/10/86.</u>

December 1985

DEQ/EQC Contested Case Log

Pet/Resp Name	Hrng Rqst	Hrng Rfrl	Hrng Date	Resp Code	Case Type & No.	Case Status
JOSEPH FOREST PRODUCTS	05/16/85	05/23/85		Hrgs	13-HW-ER-85-29 Hazardous waste disposal Civil Penalty of \$2,500	Order of Dismissal to be issued.
MAIN ROCK		05/31/85		Prtys	14-WQ-SWR-85-31 Violation of NPDES permit conditions Civil Penalty of \$3,500	<u>Stipulated order to be submitted to EQC on January 31, 1986.</u>
DANT & RUSSELL, INC.	05/31/85	05/31/85	<u>02/24/86</u>	<u>Prtys</u>	15-HW-NWR-85-60 Hazardous waste disposal Civil Penalty of \$2,500	<u>Hearing scheduled.</u>
ALTHAUSER, GLENN L.	07/08/85	07/16/85	09/20/85	Hrgs	17-SW-NWR-85-77 Unauthorized Waste Disposal	Decision due.
MERIT OIL & REFINING CO.		07/24/85	11/19/85	Prtys	20-WQ-NWR-85-61 WQ Civil Penalty of \$1,200	Settlement action.
E.J. BARTELLS CO.	10/04/85	10/08/85	<u>02/27/86</u>	Prtys	21-AQ/WQ/SW-NWR-85-78 \$10,000 Civil Penalty	<u>Hearing scheduled.</u>
AMCOAT, INC.	10/15/85	10/23/85	<u>03/10/86</u>	Prtys	22-HW/WQ-NWR-85-85 \$5,000 civil penalty	<u>Hearing scheduled.</u>
BRAZIER FOREST PRODUCTS	11/22/85	12/12/85	<u>02/10/86</u>	Prtys	23-HSW-85 Declaratory Ruling	<u>Hearing scheduled.</u>
<u>NULF, DOUG</u>	<u>01/10/86</u>	<u>01/13/86</u>		<u>Prtys</u>	<u>01-AQFB-85-02</u> <u>\$500 Civil Penalty</u>	<u>Preliminary issues.</u>

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CONTES.T

Jan. 24, 1986

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality, Water Quality,
Hazardous and Solid Waste Division
(Reporting Unit)

January 1986
(Month and Year)

SUMMARY OF PLAN ACTIONS

	Plans Received		Plans Approved		Plans Disapproved		Plans Pending
	<u>Month</u>	<u>FY</u>	<u>Month</u>	<u>FY</u>	<u>Month</u>	<u>FY</u>	
<u>Air</u>							
Direct Sources	3	42	5	44	0	0	13
Small Gasoline Storage Tanks Vapor Controls	-	-	-	-	-	-	-
Total	3	42	5	44	0	0	13
<u>Water</u>							
Municipal	5	90	14	107	0	3	21
Industrial	10	54	10	57	0	0	7
Total	15	144	24	164	0	3	28
<u>Solid Waste</u>							
Gen. Refuse	1	25	1	16	1	1	32
Demolition	1	3	-	-	-	-	4
Industrial	3	18	4	12	-	-	18
Sludge	-	1	-	-	-	-	1
Total	5	47	5	28	1	1	55
<u>Hazardous Wastes</u>							
	-	5	-	5	-	-	-
<u>GRAND TOTAL</u>	23	238	34	241	1	4	96

DEPARTMENT OF ENVIRONMENTAL QUALITY
 AIR QUALITY DIVISION
 MONTHLY ACTIVITY REPORT
 DIRECT SOURCES
 PLAN ACTIONS COMPLETED

COUNTY	NUMBER	SOURCE	PROCESS DESCRIPTION	DATE OF ACTION	ACTION
WALHEUP	105	EAGLE-PICHER IND., INC.	BAGHOUSES	01/16/86	APPROVED
CLACKAMAS	121	MURPHY PLYWOOD CO.	DRYER & SCRUBBER REBUILD	12/02/85	APPROVED
MULTNOMAH	126	WILBUR-ELLIS CO	DUST CONTAINMENT BUILDING	01/06/86	APPROVED
MULTNOMAH	127	BOEING COMM AIRPLANE	PAINT BOOTH MODIFICATIONS	01/09/86	APPROVED
LIAN	130	BOISE CASCADE CORP	SCRUBBER	01/08/86	APPROVED
TOTAL NUMBER QUICK LOOK REPORT LINES			5		

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division

(Reporting Unit)

January, 1986

(Month and Year)

SUMMARY OF AIR PERMIT ACTIONS

	Permit Actions Received		Permit Actions Completed		Permit Actions Pending	Sources Under Permits	Sources Reqr'g Permits
	<u>Month</u>	<u>FY</u>	<u>Month</u>	<u>FY</u>			
<u>Direct Sources</u>							
New	1	15	0	21	15		
Existing	1	11	0	8	14		
Renewals	5	66	6	85	86		
Modifications	<u>0</u>	<u>5</u>	<u>2</u>	<u>30</u>	<u>6</u>		
Total	7	97	8	144	121	1301	1330
<u>Indirect Sources</u>							
New	1	12	1	16	2		
Existing	0	0	0	0	0		
Renewals	0	0	0	0	0		
Modifications	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>		
Total	1	12	1	16	2	<u>248</u>	<u>250</u>
<u>GRAND TOTALS</u>	8	109	9	160	123	1549	1580

Number of
Pending Permits

Comments

23	To be reviewed by Northwest Region
21	To be reviewed by Willamette Valley Region
10	To be reviewed by Southwest Region
2	To be reviewed by Central Region
6	To be reviewed by Eastern Region
12	To be reviewed by Program Operations Section
31	Awaiting Public Notice
<u>16</u>	Awaiting end of 30-day Public Notice Period
121	

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MONTHLY ACTIVITY REPORT
DIRECT SOURCES
PERMITS ISSUED

COUNTY	SOURCE	PERMIT NUMBER	APPL. RECEIVED	STATUS	DATE ACHIEVED	TYPE APPL.	PSEL
CLACKAMAS	PARKER-NORTHWEST PAVING	03	1760 00/00/00	PERMIT ISSUED	01/07/86	MOD	Y
COLUMBIA	COLUMBIA HARBOR LUMBER CO	05	2064 06/14/85	PERMIT ISSUED	01/07/86	MOD	
DESCHUTES	DAW FOREST PRODUCTS CO	09	0018 04/23/85	PERMIT ISSUED	01/07/86	RNW	
DESCHUTES	CASCADE MATERIALS INC.	09	0023 06/24/85	PERMIT ISSUED	01/07/86	RNW	
VARION	MILLER BREWING COMPANY	24	9003 11/01/55	PERMIT ISSUED	01/07/86	RNW	
MULTNOMAH	HOLLADAY PARK PLAZA	26	0296 03/22/85	PERMIT ISSUED	01/07/86	RNW	N
MULTNOMAH	HOLLADAY PARK HOSPITAL	26	1799 11/13/85	PERMIT ISSUED	01/07/86	RNW	N
MULTNOMAH	US (FRANCO) BAKERY	26	2952 11/27/85	PERMIT ISSUED	01/07/86	RNW	N

TOTAL NUMBER QUICK LOOK REPORT LINES 8

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division
(Reporting Unit)

January, 1986
(Month and Year)

PERMIT ACTIONS COMPLETED

* County	* Name of Source/Project	* Date of	* Action	*
*	* /Site and Type of Same	* Action	*	*
*	*	*	*	*

Indirect Sources

Marion	Village East Center 680 spaces File No. 24-8203	01/28/86	Final Permit Issued
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DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality
(Reporting Unit)

January 1986
(Month and Year)

PLAN ACTIONS COMPLETED 24

* County	* Name of Source/Project * /Site and Type of Same	* Date of * Action	* Action	*
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MUNICIPAL WASTE SOURCES 14

Columbia	Gas Lite Deli (Hammerbeck) 2000 gpd on-site system	1-16-86	Final Comments to NWRO	
Jackson	Ashland Weller Lane P.U.D.	1-21-86	Provisional Approval	
Clackamas	Lake Oswego Oswego Terrage Apartment Connection	1-21-86	Provisional Approval	
Clackamas	TriCity (West Linn) Arena Park Subdivision	1-21-86	Provisional Approval	
Clackamas	Lake Oswego Heritage Park	1-21-86	Provisional Approval	
Clackamas	Lake Oswego Stafford Oaks	1-21-86	Provisional Approval	
Clackamas	Lake Oswego Kerr Parkway (Mountain Park Town Center)	1-21-86	Provisional Approval	
Josephine	Redwood SSD Willow Manor	1-17-86	Provisional Approval	
Poik	Dallas Dallas LDS Church	1-17-86	Provisional Approval	
Jackson	Eagle Point LDS Church Extension	1-17-86	Provisional Approval	
Jackson	BCVSA Sunnyside Drive (84-3)	1-17-86	Provisional Approval	
Lincoln	Yachats 7th Street & Green Street (Larry Larson)	1-17-86	Provisional Approval	

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality
(Reporting Unit)

January 1986
(Month and Year)

PLAN ACTIONS COMPLETED

* County	* Name of Source/Project * /Site and Type of Same	* Date of * Action	* Action	*
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MUNICIPAL WASTE SOURCES (Continued)

Douglas	Glide-Idlelyd Park Riverwood Meadows Extension	1-17-86	Provisional Approval	
Douglas	Green Sanitary District Tom B. Weathers Extension	1-17-86	Provisional Approval	

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division	January 1986
(Reporting Unit)	(Month and Year)

PLAN ACTIONS COMPLETED 24

* County	* Name of Source/Project	* Date	* Status	*
*	* /Site and Type of Same	* Received	*	*
*	*	*	*	*

INDUSTRIAL WASTE SOURCES 10

Tillamook	Ronald Gienger Manure Control Facilities Tillamook	1-8-86	Approved	
Tillamook	Dean Reynolds Manure Control Facilities Tillamook	1-8-86	Approved	
Marion	West Coast Grocery Co. Oil/Water Separator Salem	1-10-86	Approved	
Tillamook	Gary Silacci Manure Control System Tillamook	1-27-86	Approved	
Clackamas	Portland General Electric Oil Spill Containment System Redland	1-29-86	Approved	
Clackamas	Portland General Electric Oil Spill Containment System Mulino	1-29-86	Approved	
Marion	Portland General Electric Oil Spill Containment System Turner	1-29-86	Approved	
Washington	Portland General Electric Oil Spill Containment System North Plains	1-29-86	Approved	
Crook	Clear Pine Moldings Spill Containment Facilities Prineville	1-29-86	Approved	
Benton	Evanite Battery Separation TCE Groundwater Monitoring System Corvallis	1-29-86	Approved	

SUMMARY OF ACTIONS TAKEN
ON WATER PERMIT APPLICATIONS IN JAN 86

4 FEB 86

SOURCE CATEGORY & PERMIT SUBTYPE	NUMBER OF APPLICATIONS FILED						NUMBER OF PERMITS ISSUED						APPLICATIONS PENDING PERMIT ISSUANCE (1)			CURRENT TOTAL OF ACTIVE PERMITS		
	MONTH			FISCAL YEAR			MONTH			FISCAL YEAR			NPDES	WPCF	GEN	NPDES	WPCF	GEN
	NPDES	WPCF	GEN	NPDES	WPCF	GEN	NPDES	WPCF	GEN	NPDES	WPCF	GEN						
DOMESTIC																		
NEW	0	1	0	2	11	0	0	2	0	1	9	1	4	10	0			
RW	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0			
RWO	0	3	0	13	6	0	0	0	0	5	6	0	28	10	0			
MW	0	0	0	1	0	0	0	0	0	2	0	0	2	1	0			
MWO	0	0	0	8	1	0	0	0	0	4	0	0	7	1	0			
TOTAL	0	4	0	24	18	0	0	2	0	12	15	1	42	22	0	238	152	70
INDUSTRIAL																		
NEW	1	1	1	2	8	15	0	0	1	0	8	16	5	8	0			
RW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
RWO	1	1	0	13	12	0	2	3	0	16	9	0	28	13	0			
MW	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0			
MWO	0	0	0	5	2	1	0	0	0	7	1	1	4	1	0			
TOTAL	2	2	1	20	22	16	2	3	1	23	18	17	38	22	0	167	139	299
AGRICULTURAL																		
NEW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
RW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
RWO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
MWO	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0			
TOTAL	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2	11	58
GRAND TOTAL	2	6	1	44	41	16	2	5	1	35	34	18	80	44	0	407	302	427

1) DOES NOT INCLUDE APPLICATIONS WITHDRAWN BY THE APPLICANT, APPLICATIONS WHERE IT WAS DETERMINED A PERMIT WAS NOT NEEDED, AND APPLICATIONS WHERE THE PERMIT WAS DENIED BY DEQ.

IT DOES INCLUDE APPLICATIONS PENDING FROM PREVIOUS MONTHS AND THOSE FILED AFTER 31-JAN-86.

NEW - NEW APPLICATION
 RW - RENEWAL WITH EFFLUENT LIMIT CHANGES
 RWO - RENEWAL WITHOUT EFFLUENT LIMIT CHANGES
 MW - MODIFICATION WITH INCREASE IN EFFLUENT LIMITS
 MWO - MODIFICATION WITHOUT INCREASE IN EFFLUENT LIMITS

CAT	PERMIT NUMBER	TYPE	SUB-TYPE	SOURCE ID	LEGAL NAME	CITY	COUNTY/REGION	DATE ISSUED	DATE EXPIRES
<u>General: Placer Mining</u>									
IND	600	GEN06	NEW	100114	HAILICKA, RON		DOUGLAS/SWR	16-JAN-86	31-JUL-86
<u>NPDES</u>									
IND	100139	NPDES	RWO	87871	OREGON CHERRY GROWERS, INC.	THE DALLES	WASCO/CR	03-JAN-86	31-JAN-91
IND	100144	NPDES	RWO	70825	PORTLAND GENERAL ELECTRIC COMPANY	PRESCOTT	COLUMBIA/NWR	22-JAN-86	30-NOV-90
<u>WPCF</u>									
IND	100138	WPCF	RWO	7989	BERNERT, JOE TOWING COMPANY, INC.	WILSONVILLE	CLACKAMAS/NWR	03-JAN-86	31-DEC-90
IND	100140	WPCF	RWO	97066	WILLAMETTE INDUSTRIES, INC.	BEND	DESCHUTES/CR	03-JAN-86	31-JAN-91
IND	100141	WPCF	RWO	24358	DAW FOREST PRODUCTS COMPANY, L.P.	REDMOND	DESCHUTES/CR	03-JAN-86	31-JAN-91
DOM	100142	WPCF	NEW	100104	HUDGINS, DENNIS C. & JO AN	MYRTLE CREEK	DOUGLAS/SWR	14-JAN-86	31-DEC-90
DOM	100143	WPCF	NEW	100079	BORING, OREGON PARTNERS, LTD.	BORING	CLACKAMAS/NWR	14-JAN-86	30-NOV-90

13

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Hazardous and Solid Waste Division
(Reporting Unit)

January 1986
(Month and Year)

SUMMARY OF SOLID AND HAZARDOUS WASTE PERMIT ACTIONS

	Permit Actions Received		Permit Actions Completed		Permit Actions Pending	Sites Under Permits	Sites Reqr'g Permits
	Month	FY	Month	FY			
<u>General Refuse</u>							
New	-	3	-	3	1		
Closures	-	4	-	2	7		
Renewals	-	32	4	18	45		
Modifications	-	8	-	61	3		
Total	-	47	4	84	56	179	179
<u>Demolition</u>							
New	-	-	-	-	-		
Closures	1	1	-	-	3		
Renewals	-	1	-	1	1		
Modifications	-	1	1	2	-		
Total	1	3	1	3	4	12	12
<u>Industrial</u>							
New	2	12	-	7	8		
Closures	1	1	-	3	3		
Renewals	-	19	1	6	24		
Modifications	1	1	1	2	-		
Total	4	33	2	18	35	104	104
<u>Sludge Disposal</u>							
New	-	1	-	-	1		
Closures	-	-	-	-	-		
Renewals	-	1	-	-	1		
Modifications	-	-	-	-	-		
Total	-	2	-	-	2	16	16
<u>Hazardous Waste</u>							
New	-	1	-	-	9		
Authorizations	60	439	60	439	-		
Renewals	-	-	-	-	1		
Modifications	-	-	-	-	-		
Total	60	440	60	439	10	14	19
<u>GRAND TOTALS</u>	65	525	67	544	107	325	330

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Hazardous and Solid Waste Division
(Reporting Unit)

January 1986
(Month and Year)

PERMIT ACTIONS COMPLETED

* County	* Name of Source/Project * /Site and Type of Same	* Date of * Action	* Action	*
Deschutes	Knott Pit Landfill Existing facility	1-3-86	Permit renewed	*
Columbia	Boise Cascade, St. Helens Existing landfill	1-6-86	Permit amended	*
Douglas	Glide Transfer Station Existing facility	1-7-86	Permit renewed	*
Douglas	Myrtle Creek Transfer Station Existing facility	1-7-86	Permit renewed	*
Douglas	Oakland Transfer Station Existing facility	1-7-86	Permit renewed	*
Lane	Pope & Talbot, Inc. Existing landfill	1-13-86	Permit renewal application with- drawn	*
Polk	Fowler's Landfill Existing facility	1-14-86	Permit amended	*

DATE	WASTE TYPE	SOURCE	DISPOSE NOW	DISPOSE ANNUALLY
03-JAN-86	LAB PACK - BROMOCHLOROMETHANE	DEPARTMENT OF DEFENSE	0	3000 GALLONS
03-JAN-86	LAB PACK - HERBICIDE MONURON	DEPARTMENT OF DEFENSE	0	1000 GALLONS
03-JAN-86	LAB PACK - DECON AGENT DS-2	DEPARTMENT OF DEFENSE	0	5000 GALLONS
03-JAN-86	LAB PACK - DECON AGENT DS-2	DEPARTMENT OF DEFENSE	0	5000 GALLONS
03-JAN-86	LAB PACK - CREOSOTE	DEPARTMENT OF DEFENSE	0	1000 GALLONS
03-JAN-86	LAB PACK - DECON AGENT DS-2	DEPARTMENT OF DEFENSE	0	1000 GALLONS

6 Request(s) approved for generators in Alaska

13-JAN-86	PCB CONTAMINATED OIL	TRANSFORMERS	10 GALLONS	0
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1 Request(s) approved for generators in Idaho

16-JAN-86	PAINT SLUDGE	SPORTING AND RECREATIONAL CAMP	0	1200 GALLONS
16-JAN-86	CHROMIUM SLUDGE	SPORTING AND RECREATIONAL CAMP	0	600 DRUMS
16-JAN-86	CHROMIUM SLUDGE/PAINT SLUDGE 50:50.	SPORTING AND RECREATIONAL CAMP	0	14 DRUMS

3 Request(s) approved for generators in Montana

02-JAN-86	WASTE WATER TREATMENT SLUDGE	ALUMINUM EXTRUDED PRODUCTS	0	432 CUBIC YARDS
02-JAN-86	CARBON MATERIAL	STATE BANKS, MEMBERS OF F.R.S.	7 DRUMS	0
02-JAN-86	TITANIUM SPONGE	STATE BANKS, MEMBERS OF F.R.S.	1 DRUM	0

DATE	WASTE TYPE	SOURCE	DISPOSE NOW	DISPOSE ANNUALLY
06-JAN-86	CONCRETE AND SOIL CONTAMINATED WITH HEAVY METALS.	SEMICONDUCTORS	10 DRUMS	0
06-JAN-86	CYANIDE FILTERS	OTHER ELECTRONIC COMPONENTS	0	360 DRUMS
06-JAN-86	RAINWATER ON TRENCHES	HAZARDOUS WASTE DISPOSAL SITE	0	50,000 GALLONS
08-JAN-86	CHROMIUM TRIOXIDE	STATE BANKS, MEMBERS OF F.R.S.	1 DRUM	0
08-JAN-86	SODIUM FLUORZIRCONATE	STATE BANKS, MEMBERS OF F.R.S.	1 DRUM	0
13-JAN-86	PCB CONTAMINATED DEBRIS	NON-RCRA SPILL CLEANUP	1 DRUM	0
29-JAN-86	WOOD TREATMENT SLUDGE.	WOOD PRESERVING	0	13 CUBIC YARDS

10 Request(s) approved for generators in Oregon

02-JAN-86	PARATHION MIXTURE/DRY	RCRA SPILL CLEANUP	1 DRUM	0
02-JAN-86	MALEIC ANHYDRIDE DEBRIS	OTHER INDUS. ORGANIC CHEMICALS	0	20 DRUMS
02-JAN-86	PROPYLENE DICHLORIDE & DICHLOROPROPENE	OTHER CHEMICAL PREPARATIONS	7 DRUMS	0
02-JAN-86	PCB CONTAMINATED DIRT	COLLEGES & UNIVERSITIES	0	20 DRUMS
02-JAN-86	PCB LIGHT BALLAST GREATER THAN 500 PPM	COLLEGES & UNIVERSITIES	0	6 DRUMS
03-JAN-86	GREASE	DEPARTMENT OF DEFENSE	3 DRUMS	0
03-JAN-86	AVIATION FUEL SPILL	DEPARTMENT OF DEFENSE	5 DRUMS	0
03-JAN-86	GASOLINE SPILL RESIDUE	DEPARTMENT OF DEFENSE	5 DRUMS	0
03-JAN-86	HEAVY METAL CONTAMINATED SOLIDS	AIRCRAFT	0	250 CUBIC YARDS
06-JAN-86	EMPTY DRUMS AND DRUM PARTS CONTAMINATED WITH PHENOLIC RESIDUES.	COLLEGES & UNIVERSITIES	5 DRUMS	0
06-JAN-86	ASBESTOS	AIRCRAFT	0	100 CUBIC YARDS

DATE	WASTE TYPE	SOURCE	DISPOSE NOW	DISPOSE ANNUALLY
06-JAN-86	BLEACHING POWDER	DEPARTMENT OF DEFENSE	0	3 DRUMS
06-JAN-86	PCB TRANSFORMER GREATER THAN 500 PPM	TRANSFORMERS	600 GALLONS	0
08-JAN-86	PCB TRANSFORMERS	ELECTRIC SERVICES	0	18.5 CUBIC YARDS
08-JAN-86	PCB CONTAMINATED SOLIDS	ELECTRIC SERVICES	0	18.5 CUBIC YARDS
08-JAN-86	PCB CONTAMINATED SOLIDS	ELECTRIC SERVICES	0	111 CUBIC YARDS
13-JAN-86	WASTE GRAPHITE	AIRCRAFT	0	500 CUBIC YARDS
13-JAN-86	WASTE GRAPHITE SCRAPS	AIRCRAFT	0	500 CUBIC YARDS
13-JAN-86	SOLVENT CONTAMINATED SOLIDS	AIRCRAFT	0	250 CUBIC YARDS
13-JAN-86	POTASSIUM PERMANGANATE & WATER SOLUTION IN ABSORBANT	INDUSTRIAL GASES	330 GALLONS	0
13-JAN-86	POTASSIUM PERMANGANATE & WATER SOLUTION	INDUSTRIAL GASES	0	10 DRUMS
21-JAN-86	LAB PACKS - POISON	HAZARDOUS WASTE DISPOSAL SITE	0	400 DRUMS
21-JAN-86	CHLORINATED SOLVENTS/UST PROGRAM	AIRCRAFT	0	2000 CUBIC YARDS
22-JAN-86	CLEANUP RESIDUE	PRIMARY PRODUCTION OF ALUMINUM	0	2.7 CUBIC YARDS
22-JAN-86	CHLORINATED SOLVENTS/UST PROGRAM	AIRCRAFT	0	2000 CUBIC YARDS
22-JAN-86	CHLORINATED SOLVENTS/UST PROGRAM	AIRCRAFT	0	2000 CUBIC YARDS
22-JAN-86	NONCHLORINATED SOLVENTS/UST PROGRAM	AIRCRAFT	0	2000 CUBIC YARDS
22-JAN-86	CHLORINATED SOLVENTS/UST PROGRAM	AIRCRAFT	0	2000 CUBIC YARDS
22-JAN-86	NONCHLORINATED SOLVENTS/UST PROGRAM	AIRCRAFT	0	2000 CUBIC YARDS
22-JAN-86	CHLORINATED SOLVENTS/UST PROGRAM	AIRCRAFT	0	2000 CUBIC YARDS
22-JAN-86	CHLORINATED SOLVENTS/UST PROGRAM	AIRCRAFT	0	2000 CUBIC YARDS
29-JAN-86	SMALL CONTAINERS WITH PAINT, EPOXY, ADHESIVE, AND RESIN SOLIDS.	HAZARDOUS WASTE DISPOSAL SITE	0	135 CUBIC YARDS
29-JAN-86	HEAT TREAT SALTS LO-TEMP.	AIRCRAFT	0	40 CUBIC YARDS
29-JAN-86	WASTE HEAT TREAT SALTS.	AIRCRAFT	0	20.25 CUBIC YARDS

34 Request(s) approved for generators in Washington

DATE	WASTE TYPE	SOURCE	DISPOSE NOW	DISPOSE ANNUALLY
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54 Requests granted - Grand Total

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Noise Control Program (Reporting Unit)	January, 1986 (Month and Year)
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SUMMARY OF NOISE CONTROL ACTIONS

Source Category	New Actions Initiated		Final Actions Completed		Actions Pending	
	<u>Mo</u>	<u>FY</u>	<u>Mo</u>	<u>FY</u>	<u>Mo</u>	<u>Last Mo</u>
Industrial/ Commercial	5	70	5	50	201	201
Airports			0	5	1	1

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Noise Control Program (Reporting Unit)	January, 1985 (Month and Year)
-------------------------------------------	-----------------------------------

FINAL NOISE CONTROL ACTIONS COMPLETED

County	* * Name of Source and Location	* * Date	* * Action
Multnomah	Consolidated Freightways, Portland	01/86	In Compliance
Lane	Coast Mfg., Inc., Eugene	01/86	Source Closed
Lane	Gerald's Transmission Service, Veneta	01/86	In Compliance
Coos	Weyerhaeuser Containerboard Plant, Jordan Plant	01/86	In Compliance
Jackson	Steiner Corporation, Medford	01/86	In Compliance

CIVIL PENALTY ASSESSMENTS
DEPARTMENT OF ENVIRONMENTAL QUALITY
1986

CIVIL PENALTIES ASSESSED DURING MONTH OF JANUARY, 1986:

<u>Name and Location of Violation</u>	<u>Case No. & Type of Violation</u>	<u>Date Issued</u>	<u>Amount</u>	<u>Status</u>
Boise Cascade Corp. Columbia County	SW/WQ-NWR-85-128 Discharged leachate to public waters.	1/6/86	\$1,000	Paid 1/23/86
Michael J. Stanton Salem, Oregon	AQOB-WVR-85-159 Unauthorized open burning on 4 days.	1/22/86	\$500	Awaiting service.
Sure-Flow, Inc. Willamina, Oregon	WQ-WVR-85-169 Placed industrial waste pumpings in a location where the waste entered public waters.	1/28/86	\$500	Awaiting response to the notice.

GB5454

January, 1986
DEQ/EQC Contested Case Log

<u>ACTIONS</u>	<u>LAST MONTH</u>	<u>PRESENT</u>
1 Preliminary Issues	1	2
2 Discovery	0	0
3 Settlement Action	4	3
4 Hearing to be scheduled	0	0
5 Hearing scheduled	7	4
6 HO's Decision Due	3	5
7 Briefing	0	0
8 Inactive	<u>5</u>	<u>5</u>
SUBTOTAL of cases before hearings officer.	20	19
9 HO's Decision Out/Option for EQC Appeal	2	1
10 Appealed to EQC	0	1
11 EQC Appeal Complete/Option for Court Review	2	0
12 Court Review Option Taken	1	2
13 Case Closed	<u>0</u>	<u>3</u>
TOTAL Cases	25	26

15-AQ-NWR-81-178 15th Hearing Section case in 1981 involving Air Quality Division violation in Northwest Region jurisdiction in 1981; 178th enforcement action in the Department in 1981.

§ Civil Penalty Amount

ACDP Air Contaminant Discharge Permit

AGL Attorney General 1

AQ Air Quality Division

AQOB Air Quality, Open Burning

CR Central Region

DEC Date Date of either a proposed decision of hearings officer or a decision by Commission

ER Eastern Region

FB Field Burning

Hrng Rfrl Date when Enforcement Section requests Hearing Section schedule a hearing

Hrngrs Hearings Section

NP Noise Pollution

NPDES National Pollutant Discharge Elimination System wastewater discharge permit.

NWR Northwest Region

OSS On-Site Sewage Section

P Litigation over permit or its conditions

Prtys All parties involved

Rem Order Remedial Action Order

Resp Code Source of next expected activity in case

SS Subsurface Sewage (now OSS)

SW Solid Waste Division

SWR Southwest Region

T Litigation over tax credit matter

Transcr Transcript being made of case

Underlining New status or new case since last month's contested case log

WQ Water Quality Division

WVR Willamette Valley Region

January 1986

DEQ/EQC Contested Case Log

Pet/Resp Name	Hrng Rqst	Hrng Rfrl	Hrng Date	Resp Code	Case Type & No.	Case Status
WAH CHANG	04/78	04/78		Prtys	16-P-WQ-WVR-78-2849-J NPDES Permit Modification	Current permit in force. Hearing deferred.
WAH CHANG	04/78	04/78		Prtys	03-P-WQ-WVR-78-2012-J NPDES Permit Modification	Current permit in force. Hearing deferred.
HAYWORTH FARMS, INC., and HAYWORTH, John W.	01/14/83	02/28/83	04/04/84	Resp	50-AQ-FB-82-09 FB Civil Penalty of \$1,000	<u>Appealed to Court of Appeals.</u>
McINNIS ENT.	06/17/83	06/21/83		Prtys	52-SS/SW-NWR-83-47 SS/SW Civil Penalty of \$500	Hearing deferred pending conclusion of court action.
46 McINNIS ENTERPRISES, LTD., et al.	09/20/83	09/22/83		Prtys	56-WQ-NWR-83-79 WQ Civil Penalty of \$14,500	Hearing deferred pending conclusion of court action.
McINNIS ENTERPRISES, LTD., et al.	10/25/83	10/26/83		Prtys	59-SS-NWR-83-33290P-5 SS license revocation	Hearing deferred pending conclusion of court action.
CLEARWATER IND., Inc.	10/11/83	10/17/83	01/13/86	<u>Hrng</u>	58-SS-NWR-83-82 SS Civil Penalty of \$1000	<u>Briefing.</u>
CLEARWATER IND., Inc.	01/13/84	01/18/84	01/13/86	<u>Hrng</u>	02-SS-NWR-83-103 SS Civil Penalty of \$500	<u>Briefing.</u>

January 1986

DEQ/EQC Contested Case Log

Pet/Resp Name	Hrng Rqst	Hrng Rfrl	Hrng Date	Resp Code	Case Type & No.	Case Status
BIELEBERG, David	03/28/84	04/05/84	12/11/84	Resp	09-AQ-FB-83-04 FB-Civil-Penalty of-\$300	EQC reduced penalty to \$500 No appeal. Case closed.
FRANSCO Industries, Inc.	06/05/84	06/12/84		Prtys	17-HW-NWR-84-45 HW-Civil-Penalty of-\$2,500	By stipulated order EQC established compliance dates and penalty schedule with penalty tied to results.
FRANSCO Industries, Inc.	06/05/84			Prtys	18-HW-NWR-84-46 HW-Compliance-Order	By stipulated order EQC established compliance dates and penalty schedule with penalty tied to results.
VANDERVELDE, Roy	06/12/84	06/12/84	08/22/85	Resp	20-WQ-WVR-84-01 WQ-Civil-Penalty of-\$2,500	No appeal. Case closed.
CLEARWATER Industries, Inc.	10/11/84	10/11/84	01/13/86	Hrng	24-SS-NWR-84-P Sewage Disposal Service License Denial	Hearing request withdrawn.
LAVA DIVERSION PROJECT	12/14/84	12/27/84		Prtys	25-WQ-CR-FERC-5205 Hydroelectric plant certification	EQC certification denial appealed to Court of Appeals.
UNITED CHROME PRODUCTS, INC.		02/19/85		Hrgs	02-HW-WQ-WVR-84-158 \$6,000 civil penalty	Decision due.

January 1986

DEQ/EQC Contested Case Log

Pet/Resp Name	Hrng Rqst	Hrng Rfrl	Hrng Date	Resp Code	Case Type & No.	Case Status
FUNRUE, Amos	03/15/85	03/19/85	06/20/85	Resp	05-AQ-FB-84-141 Civil Penalty of \$500	<u>Appeal filed 2/5/86.</u>
JOSEPH FOREST PRODUCTS	05/16/85	05/23/85		<u>Ptys</u>	13-HW-ER-85-29 Hazardous waste disposal Civil Penalty of \$2,500	<u>Decision issued 1/14/86.</u>
MAIN ROCK		05/31/85		Prtys	14-WQ-SWR-85-31 Violation of NPDES permit conditions Civil Penalty of \$3,500	<u>By stipulated order EQC reduced \$3,500 civil penalty to \$625.</u>
DANT & RUSSELL, INC.	05/31/85	05/31/85	02/24/86	Prtys	15-HW-NWR-85-60 Hazardous waste disposal Civil Penalty of \$2,500	Hearing scheduled.
ALTHAUSER, GLENN L.	07/08/85	07/16/85	09/20/85	Hrgs	17-SW-NWR-85-77 Unauthorized Waste Disposal	Decision due.
MERIT OIL & REFINING CO.		07/24/85	11/19/85	Prtys	20-WQ-NWR-85-61 WQ Civil Penalty of \$1,200.	Settlement action.
E.J. BARTELLS CO.	10/04/85	10/08/85	02/27/86	Prtys	21-AQ/WQ/SW-NWR-85-78 \$10,000 Civil Penalty	Hearing scheduled.

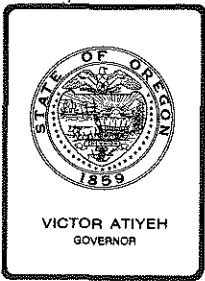
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January 1986

DEQ/EQC Contested Case Log

<u>Pet/Resp Name</u>	<u>Hrng Rqst</u>	<u>Hrng Rfrl</u>	<u>Hrng Date</u>	<u>Resp Code</u>	<u>Case Type & No.</u>	<u>Case Status</u>
AMCOAT, INC.	10/15/85	10/23/85	03/10/86	Prtys	22-HW/WQ-NWR-85-85 \$5,000 civil penalty	Hearing scheduled.
BRAZIER FOREST PRODUCTS	11/22/85	12/12/85	02/10/86	Prtys	23-HSW-85 Declaratory Ruling	Hearing scheduled.
NULF, DOUG	01/10/86	01/13/86		Prtys	01-AQFB-85-02 \$500 Civil Penalty	Preliminary issues.
<u>DOERFLER, RICHARD</u>	<u>01/24/86</u>	<u>01/31/86</u>		<u>Prtys</u>	<u>02-AQFB-85-03</u> <u>\$300 Civil Penalty</u>	<u>Preliminary Issues.</u>

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Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission
From: Director
Subject: Agenda Item C, March 14, 1986, EQC Meeting

TAX CREDIT APPLICATIONS

Director's Recommendations

It is recommended that the Commission take the following action:

1. Issue tax credit certificates for facilities subject to old tax credit laws:

<u>Appl. No.</u>	<u>Applicant</u>	<u>Facility</u>
T-1696	Oregon Cherry Growers, Inc.	Wastewater Pretreatment System
T-1781	Teledyne Industries, Inc.	Aqueous Ammonia Storage Facility
T-1784	Teledyne Industries, Inc.	Bag Filter Dust Collection System and Containment Area with Sump Pump
T-1798	Hanna Nickel Smelting Co.	Dust Collection and Venturi Scrubber System
T-1799	Graphic Arts Center, Inc.	Vapor Incinerator
T-1814	Boise Cascade Corporation	Silencers for No. 3 Recovery Boiler

2. Issue tax credit certificate for facility subject to the new tax credit laws:

Appl. No.	Applicant	Facility
T-1748	Roseburg Forest Products Co.	Baghouse
T-1778	Davidson Leasing	Propane Flamer


Fred Hansen

S. Chew:r
(503) 229-6484
February 18, 1986
MR522

EQC Agenda Item C
March 14, 1986
Page 3

Proposed March 14, 1986 Totals:

Air Quality	\$ 748,676.31
Water Quality	116,068.00
Hazardous/Solid Waste	-0-
Noise	18,387.00
	<u>\$ 883,131.31</u>

1986 Calendar Year Totals before adding tax credits certified at
this EQC meeting:

Air Quality	\$ 627,977.49
Water Quality	782,031.81
Hazardous/Solid Waste	138,388.22
Noise	-0-
	<u>\$1,548,397.52</u>

SChew
229-6484
19 February 1986

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Oregon Cherry Growers, Inc.
1520 Woodrow St., N.E.
Salem, OR 97303

The applicant owns and operates a cherry processing facility located at Salem, Oregon.

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

2. Description of Claimed Facility

The facility described in this application is waste water pretreatment system consisting of the following components:

- (a) Dewatering screen.
- (b) Pumps and piping.
- (c) Parshall Flume, flow instrumentation, and associated electrical equipment.
- (d) Caustic metering pump.

Request for Preliminary Certification for Tax Credit was made January 20, 1983, and approved February 14, 1983. Facility is subject to the 1981 tax credit law. Construction was initiated on the claimed facility September 19, 1983, completed November 30, 1983, and the facility was placed into operation December 1, 1983. The application was received on May 8, 1984, and found to be complete on December 31, 1985. Applications for those facilities completed before January 1, 1984, must be submitted by January 1, 1986.

Facility Cost: \$75,110.00 (Accountant's Certification was provided.)

3. Evaluation of Application

Prior to installation of the claimed facility, cherry processing effluent was discharged to the City of Salem sewerage system unscreened. To comply with pretreatment requirements, the City required the applicant to install solids removal equipment and to upgrade the pH neutralization system. The new facility collects waste water from the cherry storage vats and bottling line and conveys it over a 20-mesh screen. Screened effluent flows through a Parshall Flume, passes flow recording equipment, and enters the city sewer.

Caustic soda is also added at the head works of this system to neutralize the pH. Solids removed by the screen are disposed at a sanitary landfill. There is no return on investment from this facility. It has succeeded in complying with the City's pretreatment requirements.

4. Summation

- a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.
- b. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).
- c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing water pollution.
- d. The facility is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.
- e. The portion of the facility cost that is properly allocable to pollution control is 80 percent or more.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$75,110.00 with 80 percent allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1696.

LDP/c
WC62
(503) 229-5374
2/26/86

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Teledyne Industries, Inc.
Teledyne Wah Chang Albany
PO Box 460
Albany, OR 97321

The applicant owns and operates a zirconium, hafnium, tantalum, titanium, and niobium production plant at Albany, Oregon.

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

2. Description of Claimed Facility

The facility described in this application is an aqueous ammonia storage facility consisting of a 40,000 gallon horizontal tank, surrounding concrete berm, sump, pump, and associated piping.

Request for Preliminary Certification for Tax Credit was made April 4, 1979, and approved April 16, 1979. Facility is subject to the 1981 tax credit law. Construction was initiated on the claimed facility May 11, 1979, completed September 15, 1980, and the facility was placed into operation September 15, 1980.

Applications for facilities completed before January 1, 1984 must be submitted by January 1, 1986. The application was received on December 31, 1985 and found complete on December 31, 1985. This requirement is therefore met.

Facility Cost: \$36,853.00 (Accountant's Certification was provided).

3. Evaluation of Application

The claimed facility consists of an additional storage tank for aqueous ammonia removed in the waste water ammonia recovery system. Prior to installation of the claimed facility, a single 45,000 gallon tank was used to store recovered ammonia. Occasionally, when this tank was full, the recovery system would be shut down until the system was rebalanced. The ammonia is sold or recycled in the zirconium extraction process. Shut down of the recovery system would result in elevated levels of ammonia in the plant effluent. The new tank provides additional storage of recovered ammonia which allows continuous operation of the recovery system. Ammonia discharges to

Truax Creek have been greatly reduced in recent years. Although the recovered ammonia is either recycled in the process or sold as fertilizer, the cost of steam to operate the ammonia stripping system far exceeds the value of the ammonia. There is no return on investment from this facility.

4. Summation

- a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.
- b. Facility was constructed on or after January 1, 1967, as required by ORS 468.165(1) (a) .
- c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing water pollution.
- d. The facility is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.
- e. The portion of the facility cost that is properly allocable to pollution control is 80 percent or more.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$36,853.00 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1781.

L. D. Patterson
(503) 229-5374
January 10, 1986

WS2270

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Teledyne Industries, Inc.
Teledyne Wah Chang Albany
PO Box 460
Albany, OR 97321

The applicant owns and operates a zirconium, hafnium, tantalum and niobium production plant at 1600 Old Salem Road, Albany, Oregon.

Application was made for a pollution control facility (air and water combined).

2. Description of Claimed Facility

The facility described in this application is a bag filter dust collection system (air pollution control) and a containment area with sump and pump (water pollution control).

Request for Preliminary Certification for Tax Credit was made on January 18, 1982, and approved on March 18, 1982.

The facility is not subject to the provisions of the new tax credit law, Chapter 637, Oregon Law 1983.

Construction was initiated on the eligible portion of the claimed facility after January 18, 1982, completed on March 1, 1983, and the facility was placed into operation on March 1, 1983.

Applications for facilities completed before January 1, 1984 must be submitted to DEQ by January 1, 1986. The application was received on December 3, 1985, and the application was considered complete on December 3, 1985. This requirement is therefore met.

Claimed Facility Cost: \$40,680 (Accountant's Certification was provided) of which \$39,255 is eligible.

3. Evaluation of Application

The claimed facility, consisting of a bag filter dust collection system and a containment area with sump and pump, was installed in the new zirconium and titanium conditioning building to provide both air and water pollution control.

The bag filter dust collection system controls particulate emissions generated by the continuous steel shot blaster unit. All metallic material collected by the bag filter dust collection system is disposed of by selling the material to a scrap metals dealer.

The containment area with sump and pump was installed to provide spill control for two (2) 3,000 gallon acid storage tanks and related pickle acid and rinse process operations associated with the zirconium and titanium conditioning process. The containment system with sump and pump prevents discharge of untreated wastewater containing acids into a receiving stream or the groundwater by discharging the untreated wastewater into the wastewater treatment system. The wastewater treatment system neutralizes the acid solution containing hydrofluoric acid, nitric acid and water with a lime slurry. The wastewater treatment system also removes the fluoride from the wastewater by precipitation and settling of calcium fluoride.

The claimed facility has been inspected by Departmental personnel and has been found to be operating in compliance with Department regulations and permit conditions. It has been reported that the bag filter dust collection system has been 99 percent effective in removal of particulate matter. In addition, fluoride removal from the wastewater by the wastewater treatment system has been reported to be in excess of 99 percent.

A breakdown of the claimed facility cost of \$40,680 is as follows:

Bag Filter Dust Collection System (air pollution control)		\$35,150
Baghouse	\$29,000	
Cement pad and installation	5,000	
Freight	<u>1,150</u>	
	TOTAL	\$35,150
 Containment Area with Sump and Pump (water pollution control)		 \$ 5,530
Sump pump	\$ 2,905	
Saw hole for sump	825	
Excavation for pit	600	
Sump pump installation, plumbing and electrical wiring	<u>1,200</u>	
	TOTAL	\$ 5,530 \$40,680

The approval letter for the preliminary certification, dated March 18, 1982, mentioned that the spill control pit was constructed prior to submittal of the "Request for Preliminary Certification." Therefore, the costs associated with the saw hole for the sump and the excavation for the pit are not eligible for tax credit. This reduces the water quality portion of the claimed facility cost by \$1,425, making the eligible portion of the water pollution control costs \$4,105 (\$5,530 - \$1,425). The total eligible facility cost is then \$39,255 (\$35,150 air pollution control + \$4,105 water pollution control).

Approximately 15,000 pounds of metallic material is collected annually by the bag filter dust collector which is sold for \$0.02 per pound for a total of \$300 annually. Based upon an annual cash flow of \$300, 5-year life, and an eligible facility cost of \$39,255, there is a negligible rate of return on investment in the facility and 80 percent or more of the facility cost is allocable to pollution control.

4. Summation

- a. The facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.
- b. The facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).
- c. The facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing air pollution.
- d. The facility is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.
- e. The portion of the eligible facility cost that is properly allocable to pollution control is 80 percent or more.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$39,255 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1784.

W. J. Fuller:s
AS2338
(503) 229-5749
February 24, 1986

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Hanna Nickel Smelting Company
PO Box 85
Riddle, OR 97469

The applicant owns and operates a nickel laterite mine and ferronickel smelter at Riddle, Oregon.

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

2. Description of Claimed Facility

The facility described in this application consists of a bag filter dust collection system and a venturi scrubber system.

Request for Preliminary Certification for Tax Credit was made on April 26, 1976 and approved on May 3, 1976.

The facility is not subject to the provisions of the new tax credit law, Chapter 637, Oregon Law 1983.

Construction was initiated on the claimed facility on June 25, 1976, completed on September 12, 1977, and the facility was placed into operation on September 12, 1977.

Applications for facilities completed before January 1, 1984 must be submitted to DEQ by January 1, 1986. The application was received on December 10, 1985, additional information was received on December 31, 1985, and the application was considered complete on December 31, 1985. This requirement is therefore met.

Claimed Facility Cost: \$667,788 of which \$510,949 is eligible. (Accountant's Certification was provided).

3. Evaluation of Application

The claimed facility consists of two independent dust collection systems. The first system employs a bag filter dust collection system to control emissions generated during the handling and transfer of ore by a series of hooded belt conveyors operating between the crusher house and the two (2) day storage bins.

The second system consisting of a venturi wet scrubber installation preceded by a two-cyclone first stage and a four-cyclone second stage is used to control emissions from the #4 rotary dryer. Material collected by the venturi scrubber is in a slurry form and is

discharged to a cone thickener. Solids from the thickener are pumped to the #4 dryer where they are reclaimed. The water is recirculated back to the venturi scrubber. The dry material collected by the two stages of cyclones is returned to the ore flow by screw conveyors and a fluid flow pump.

The claimed facility was source tested after completion of the installation and was found to be operating in compliance with Department regulations and permit conditions.

Since cyclones in general are not considered pollution control equipment by the Department, the claimed facility cost of \$667,788 must be reduced by all costs associated with the second system cyclones to determine eligible cost. This reduction includes a pro-rata share of the motor, motor starter, fluid drive and induced draft fan, and miscellaneous items which are common to both cyclones and venturi scrubber. The pro-rata share is based on the ratio of the pressure drop through the cyclones to the pressure drop through the entire system and is computed below.

A breakdown of costs associated with the six cyclones and the total cost reduction to determine eligible cost are noted below:

six cyclones	\$ 58,200
three hopper discharge valves	2,000
portion of fan cost (0.444 x \$23,505)	10,436
portion of fluid drive cost (0.444 x 21,094)	9,366
portion of motor cost (0.444 x 20,496)	9,108
portion of motor starter cost (0.444 x 8,734)	3,878
screw conveyor	3,713
dust transporter	12,637
portion of supporting structure cost (0.444 x 53,848)	23,909
portion of concrete cost (0.444 x 24,216)	10,752
portion of struct steel & equipment installation (.0444 x 28,920)	12,840
Total	\$156,839

Therefore the eligible facility cost is \$510,949 (\$667,788 - \$156,839).

The material collected annually by the claimed facility (exclusive of cyclones) is estimated to be 155 tons. The value of this material is \$0.647/lb based on a nickel content of 1.5 percent resulting in an annual return of \$2,417. The annual operating expenses before taxes, exclusive of depreciation, is \$16,250 and is broken down as follows:

labor	2,260
power	10,018
supplies	<u>3,972</u>
Total	\$16,250

Since the annual operating expenses exceed the value of the material collected, there is no return on the investment in the facility and 80 percent or more of the eligible facility cost is allocable to pollution control.

4. Summation

- a. The facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.
- b. The facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).
- c. The facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing air pollution.
- d. The facility is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.
- e. The portion of the eligible facility cost that is properly allocable to pollution control is 80 percent or more.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$510,949 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1798.

W. J. Fuller:s
AS2268
(503) 229-5949
February 24, 1986

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Graphic Arts Center Inc.
2000 NW Wilson Street
Portland, OR 97209

The applicant owns and operates a color printing press for books, catalogs, etc., at 2000 NW Wilson Street, Portland, Oregon.

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

2. Description of Claimed Facility

The facility described in this application is a vapor incinerator used to oxidize the solvent vapors generated by drying the printing ink on the paper (web) in the high velocity hot air dryer of the number 2 press. The equipment and cost are:

TEC CRPC-II Size 6 Catalytic Incinerator	\$ 85,050
Electrical Installation	26,000
Rigging	4,500
Miscellaneous	<u>4,145</u>
Total	\$119,695

Request for Preliminary Certification for Tax Credit was made on April 8, 1983 and approved on May 26, 1983.

The facility is not subject to the provisions of the new tax credit law, Chapter 637, Oregon Law 1983.

Construction was initiated on the claimed facility on April 15, 1983, completed on June 15, 1983, and the facility was placed into operation on June 15, 1983.

Applications for facilities completed before January 1, 1984 must be submitted to DEQ by January 1, 1986. The application was received on December 31, 1985, and the application was considered complete on December 31, 1985. This requirement is therefore met.

Facility Cost: \$119,695.00 (Accountant's Certification was provided).

3. Evaluation of Application

The company operates a commercial heatset web-offset lithography printing press. The number 2 press formerly shared a control device with the number 1 press. The plume from this shared device violated the Department's opacity rule. The solvents dried from the inks are actually oils that, without incineration, condense upon being exhausted into the air.

The incinerator connected to the number 2 dryer contains a catalytic oxidizer guaranteed by the manufacturer to maintain a 90 percent hydrocarbon reduction across the catalyst. The claimed facility was inspected by the Department and operates satisfactorily.

The incinerator has a natural gas burner to raise the dryer exhaust up to the operating temperature of the catalytic bed. After the catalytic bed, there are two heat exchangers: a primary heat exchanger which pre-heats the dryer exhaust input to the incinerator and a secondary heat exchanger which heats up the dryer intake air from room temperature. The incinerator cannot generate enough heat from ink solvents to heat the web dryer intake air to produce a positive return on investment. Thus, 80 percent or more of the cost is allocable to pollution control.

4. Summation

- a. The facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.
- b. The facility was constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).
- c. The facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling, or reducing air pollution.
- d. The facility is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.
- e. The portion of the facility cost that is properly allocable to pollution control is 80 percent or more.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$119,695.00 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1799.

Ray Potts:s
AS2267
(503) 229-6093
February 24, 1986

STATE OF OREGON - DEPARTMENT OF ENVIRONMENTAL QUALITY

Tax Relief Application Review Report

1. Applicant

Boise Cascade Corporation
Paper Division
One Jefferson Square
Boise, ID 83728

The applicant owns and operates a pulp and paper mill at St. Helens, Oregon.

Application was made for tax credit for a noise pollution control facility.

2. Description of Claimed Facility

The facility described in this application is a bank of silencers in the No. 3 recovery boiler stack to reduce noise from steam cleaning of the boiler induced draft fan.

Request for Preliminary Certification for Tax Credit was made April 14, 1983, and approved April 22, 1983.

Facility is subject to the 1981 tax credit law. Construction was initiated on the claimed facility May 1, 1983, completed July 6, 1983, and the facility was placed into operation July 7, 1983.

Applications for facilities completed before January 1, 1984 must be submitted to DEQ by January 1, 1986. The application was received on December 31, 1985, and the application was considered complete on December 31, 1985. This requirement is therefore met.

Facility Cost: \$18,387 (Copies of invoices were provided.)

3. Evaluation

On November 30, 1982, DEQ received two separate complaints about excessive noise from the St. Helen's Boise-Cascade facility. After contacting the company and identifying the source of the noise the company agreed to install a bank of noise silencers.

Prior to construction of this facility, the induced draft fan cleaning exceeded noise standards by approximately 10 decibels. Installation of the silencers reduced noise levels to within daytime standards and the equipment is not operated during nighttime hours. One hundred percent of the facility costs are allocable to noise pollution control as the sole purpose of the pollution control facility is to reduce noise emissions.

4. Summation

- a. Facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.
- b. Facility was constructed on or after January 1, 1977, as required by ORS 468.165(1)(b).
- c. Facility is designed for and is being operated to a substantial extent for the purpose of preventing, controlling or reducing noise pollution.
- d. The facility is necessary to satisfy the intents and purposes of ORS Chapter 467 (noise) and the rules adopted under that chapter.
- e. The portion of the facility cost that is properly allocable to pollution control is 80 percent or greater.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$18,387 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application Number T-1814.

John Hector:s
229-5989
February 24, 1986
AS2305

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Roseburg Forest Products Co.
Particleboard Plant
P.O. Box 1088
Roseburg, OR 97470

The applicant owns and operates a particleboard plant near Dillard, Oregon.

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

2. Description of Claimed Facility

The facility described in this application is a baghouse on a new pneumatic plytrim conveying system for storage silo No. 6.

Request for Preliminary Certification for Tax Credit was made on 12-5-83 and approved on 1-24-84.

The facility is subject to the provisions of the new tax credit law, Chapter 637, Oregon Law 1983.

Construction was initiated on the claimed facility in February 1984, completed in April 1984, and the facility was placed into operation in April 1984.

Final tax credit certification applications for facilities completed after December 31, 1983 must be submitted within 2 years of substantial completion of the facility. The application was received on June 26, 1985, additional information was received on November 27, 1985 and February 6, 1986. This requirement has, therefore, been met.

Facility Cost: \$76,107.41 as adjusted by DEQ analysis. (Accountant's Certification was provided).

3. Evaluation of Application

Roseburg Forest Products installed an air conveying wood chip transport and receiving facility on storage silo No. 6. The facility was installed to provide additional raw material storage flexibility for manufacturing particleboard. The new system allows the loading of these chips into silo No. 6 or they may continue to be diverted to silo No. 4.

The new No. 6 storage silo loading facility included a Macron 150 bagfilter. The composite Macron 150 is a primary filter receiver consisting of a cyclone body, the filter media, the bag purge blower, an air lock and the support structure. When wood material is vented to No. 6 silo rather than through the non-controlled cyclone on silo No. 4, a particulate emission reduction of about 6 lbs/hr is realized.

The Company claims the total project cost of \$92,269.27 should be properly allocable to pollution control. The Department considers only the bagfilter and directly associated equipment meet the criterion of ORS 468.155 and OAR 340-60-015 as pollution control facilities.

The blowpipe, diverter valve and cyclone body (primary separator of transport air and transported wood chips) are necessary components for the manufacturing operations and not for pollution control.

The Company maintains that because the cyclone body part of the system has some effect as a primary dust collector ahead of the filter (although its primary function is to separate the wood chips from the transport air) its cost should be allocated to pollution control. The Department recommends disallowing this cost. A cyclone operating with high material/air separation utilization, as in this facility, is not considered as a pollution control device.

Analysis of eligible costs:

Project Cost

Equipment and material	\$65,648.35
Labor	<u>20,511.42</u>
Sub Total	\$85,159.77
Crane Service	<u>6,109.50</u>
Total	\$92,269.27

Less Non-Pollution Control

Blowpipe	\$7,720.00	
Blowpipe Installation	3,500.00	
Cyclone/Installation	<u>3,860.00</u>	
		\$15,080.00

Less Proportion of Crane Service

<u>15,080.00</u> x 6,109.50 =	\$ 1,081.86
85,159.77	

Allocable to Pollution Control: \$76,107.41

An amount of \$76,107.41 is a reasonable part of the facility cost which may be certified at 100 percent pollution control.

The facility was determined to be in compliance with emission standards during a plant-wide inspection in 1985.

4. Summation

- a. The facility was constructed in accordance with the requirements of ORS 468.175, regarding preliminary certification.
- b. The facility was constructed on or after January 1, 1967, as required by ORS 468.165(1) (a).
- c. The facility is designed for and is being operated for the sole purpose of preventing, controlling or reducing a substantial quantity of air pollution.
- d. The facility is necessary to satisfy the intents and purposes of ORS Chapter 468 and the rules adopted under that chapter.
- e. The portion of the facility cost that is properly allocable to pollution control is \$76,107.41.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$76,107.41 with 100 percent allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1748.

D. NEFF:a
AA5247
(503) 229-6480
February 25, 1986

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Davidson Leasing
18361 River Road NE
St. Paul, OR 97137

The applicant owns and operates a grass seed farm and equipment leasing operation at St. Paul, Oregon.

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

2. Description of Claimed Facility

The facility described in this application is a standard propane flamer used for sanitation of grass seed fields as an approved alternative to open field burning. Included is a 1985 model 30 foot wide "Field Flamer" purchased from Rear's Manufacturing Co. of Eugene for \$5,779.90 and a 500 gallon propane tank valued at \$995.00, for a total facility cost of \$6,774.90.

Request for Preliminary Certification for Tax Credit was made on February 28, 1985 and approved on March 5, 1985.

The equipment is subject to the 1983 tax credit law. Construction (purchase) was initiated July 1985, completed August, 1985, and the equipment was placed into operation September, 1985.

Final tax credit certification applications for facilities completed after December 31, 1983 must be submitted within 2 years after substantial completion of the facility. Application was received on November 27, 1985 and considered complete on January 17, 1986. This requirement was, therefore, met.

Equipment cost: \$6,774.90 (Receipts and statements provided).

3. Evaluation of Application

A propane flamer is a specialized farm implement used solely for the purpose of sanitizing grass seed fields in lieu of open field burning. Propane flamers have been approved by the Department and the Field Burning Advisory Committee as an alternative method of field sanitation and are specifically authorized as eligible for pollution

control tax credit. Propane flaming has been encouraged by the Department's regulatory policies and is allowed by rule provided that the combustible straw residue is first removed from the field and minimum operational criteria are met to insure reduced emissions.

The equipment will be operated for the personal use of the applicant in sanitizing the applicants own grass seed crops. The equipment will not be leased out for commercial use.

The percent allocable to pollution control (100%) is based on the determination that the sole use of the propane flamer is for field sanitation (pollution control). A negative average annual cash flow is expected because operating expenses for propane flaming exceed those for field burning with no identifiable increase in income afforded.

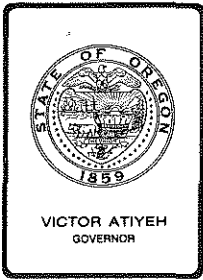
4. Summation

- a. The equipment was purchased and used in accordance with the requirements of ORS 468.175, regarding preliminary certification.
- b. The equipment was purchased and used on or after January 1, 1967, as required by ORS 468.165(1) (a).
- c. The equipment is designed for and is being operated for the sole purpose of preventing controlling or reducing a substantial quantity of air pollution.
- d. The equipment is authorized for tax credit eligibility by OAR 340-16-025(2) (g) (B), and complies with DEQ statutes and rules.
- e. The portion of the equipment that is properly allocable to pollution control is 100 percent.

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$6,774.90 with 100% allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1778.

SKO'Connell:r
MR555
(503) 686-7837
2/24/86



Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission
From: Director
Subject: Agenda Item D, March 14, 1986, EQC Meeting

Request for Authorization to Conduct a Public Hearing on Revisions to OAR 340, Division, 30, Specific Air Pollution Control Rules for the Medford-Ashland Air Quality Maintenance Area Concerning Source Testing Requirements as an Amendment of the State Implementation Plan

Background

Oregon Administrative Rules Chapter 340, Division 30, Specific Air Pollution Control Rules for the Medford-Ashland Air Quality Maintenance Area (AQMA), were adopted on April 7, 1978, to aid in Oregon's Clean Air Act Implementation Plan for particulate matter in the Medford-Ashland AQMA. Several industrial source categories are limited in the amount of total suspended particulate which can be emitted in their gaseous discharges. Sources subject to these regulations include woodwaste boilers, veneer dryers, wood particle dryers, hardboard manufacturing plants, and charcoal producing plants.

In order to demonstrate that these industrial processes are complying with their emission limits, a requirement to conduct scheduled tests of discharge gases to quantify particulate emissions was included in the regulations (OAR 340-30-055). Such tests are generally referred to as "source tests." The applicable industrial sources are required to test at a set frequency, generally once each year. A requirement for large woodwaste boilers and charcoal plants was also adopted which required additional quarterly tests if results of the annual test demonstrate an exceedance of the emission limit. Compliance would be determined based on the average of the quarterly tests and the annual source test.

Alternatives and Evaluation

The requirement to conduct three (3) additional quarterly tests makes it difficult, if not impossible, for the Department to determine the compliance status of sources. The requirement that the quarterly tests be averaged delays the correction of process problems by stretching the compliance determination process over a year long period. This requirement also causes problems for the regulated industries because of the frequency of testing and the associated scheduling problems.

An example illustrated the ineffectiveness of the current requirement to conduct additional quarterly testing. A woodwaste boiler conducted its annual source test approximately two (2) years ago, and results demonstrated an exceedance of the emission limit. Seven (7) months later the Department issued a Notice of Violation and Intent to Assess Civil Penalty for not initiating quarterly testing. The company had, in fact, conducted its first "quarterly" test five (5) months after the annual test, but failed to report the test results. The delay in testing was attributed to conflicts with scheduled maintenance of the boiler and air pollution control equipment. Results of this second test demonstrated another emission limit exceedance. The company estimated that because of the degree of exceedance, the average emissions would still show noncompliance in spite of further quarterly testing. A third test was conducted eight (8) months later, and it too demonstrated noncompliance. The company then claimed that their boiler, due to arithmetically averaging test results to date, could never come into compliance with OAR 340-30-055(1). The fourth test has been conducted in February 1986 with results expected to be available in the near future. It is highly improbable that this source will demonstrate compliance under the current rule because of the test averaging requirement, even if the results are below the emission standard.

The current rule requirement for additional, more frequent testing creates problems for both the Department and the regulated sources. A final evaluation of a source to characterize its compliance/non-compliance cannot be made until the completion of all quarterly testing. As can be seen from the example, it is difficult to get a source to adhere to a strict quarterly test program due to scheduling conflicts. Source test reports may not be submitted in a timely manner, as required to keep the Department abreast of the current compliance status. An inherent problem with the rule is that it requires additional testing without a requirement to take corrective action to eliminate the cause of the exceedances. The rule allows a source to operate for a year or more above the emission limit before the final compliance determination can be made.

The current rule also poses problems for the sources. Affected facilities in the Medford-Ashland AQMA have complained of the high costs of repetitive testing (see Attachment B). It is acknowledged by the regulated industries that averaging results from repetitive tests does not help to achieve compliance.

It is proposed that OAR 340-30-055(1) be revised to delete the note which requires quarterly testing following a standard exceedance on an annual source test (see Attachment A). If such a rule amendment were adopted, the annual source test results would be used to determine compliance. Wood-waste boilers and charcoal plants in the Medford-Ashland AQMA would then be treated the same as other sources throughout Oregon which must demonstrate compliance through a single source test.

Such a rule change would allow the Department to require the responsible owner or operator of the facility to take expeditious corrective action to achieve compliance. Depending on the degree of exceedance, and the corrective actions taken, another source test may or may not be required to demonstrate compliance.

In addition to the single annual test, the Department conducts inspections, exhaust plume visual observations, and responds to public complaints.

An additional proposed housekeeping amendment is the elimination of the phrase "as an annual average" following the emission limits for woodwaste boilers (340-30-015(1)), wood particle dryers at particleboard plants (340-30-030), hardboard manufacturing plants (340-40-031), and charcoal producing plants (340-30-040(1)). "As an annual average" implies that sources are demonstrating compliance throughout the year based on only the one source test result. In reality, the annual test is only demonstrating the performance of the source during the period of the tests.


Summation

1. The current rule regarding source testing for particulate emissions for large woodwaste boilers, and for charcoal plants, requires quarterly testing subsequent to an emission limit exceedance as demonstrated in an annual test.
2. To demonstrate compliance, the average of the quarterly tests must be less than the emission limit. The quarterly testing requirement makes it difficult if not impossible to determine the compliance status of sources.
3. Adoption of the proposed amendment to delete the quarterly testing requirement while requiring corrective action to achieve compliance with emission standards would expedite bringing a source into compliance.
4. Additional housekeeping amendments to omit the phrase "an annual average" describing emission limits, would minimize misinterpretation and application of the results from annual source tests.

EQC Agenda Item D
March 14, 1986
Page 4

Director's Recommendation

Based on the summation, it is recommended that the EQC authorize a public hearing to consider amending the State Implementation Plan regarding source testing in the Medford-Ashland AQMA (see Attachment C). The proposed amendments would omit from the testing regulation the requirement to conduct quarterly source testing on large woodwaste boilers, and charcoal plants subsequent to an emission limit exceedance on an annual test.



Fred Hansen

Attachments

- A. Amendments to OAR 340, Division 30
- B. List of Affected Facilities
- C. Notice of Proposed Public Hearing and Rulemaking Statements

Don Peters:s
229-5988
February 25, 1986

AS2439

OREGON ADMINISTRATIVE RULES
CHAPTER 340, DIVISION 30 — DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION 30

SPECIFIC AIR POLLUTION
CONTROL RULES FOR THE
MEDFORD-ASHLAND AIR QUALITY
MAINTENANCE AREA

Purposes and Application

340-30-005 The rules in this division shall apply in the Medford-Ashland Air Quality Maintenance Area (AQMA). The purpose of these rules is to deal specifically with the unique air quality control needs of the Medford-Ashland AQMA. These rules shall apply in addition to all other rules of the Environmental Quality Commission. The adoption of these rules shall not, in any way, affect the applicability in the Medford-Ashland AQMA of all other rules of the Environmental Quality Commission and the latter shall remain in full force and effect, except as expressly provided otherwise. In cases of apparent conflict, the most stringent rule shall apply.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78

Definitions

340-30-010 As used in these rules, and unless otherwise required by context:

(1) "Medford-Ashland Air Quality Maintenance Area" is defined as beginning at a point approximately one mile NE of the town of Eagle Point, Jackson County, Oregon, at the NE corner of Section 36, T35S, R1W; thence south along the Willamette Meridian to the SE corner of Section 25, T37S, R1W; thence SE along a line to the SE corner of Section 9, T39S, R2E; thence SSE to the corner of Section 22, T39S, R2E; thence south to the SE corner of Section 27, T39S, R2E; thence SW to the SE corner of Section 33, T39S, R2E; thence west to the SW corner of Section 31, T39S, R2E; thence NW to the NW corner of Section 36, T39S, R1E; thence west to the SW corner of Section 26, T39S, R1E; thence NW along a line to the SE corner of Section 7, T39S, R1E; thence west to the SW corner of Section 12, T39S, R1W; thence NW along a line to the SW corner of Section 20, T38S, R1W; thence west to the SW corner of Section 24, T38S, R2W; thence NW along a line to the SW corner of Section 4, T38S, R2W; thence west to the SW corner of Section 5, T38S, R2W; thence NW along a line to the SW corner of Section 31, T37S, R2W; thence north along a line to the Rogue River, thence north and east along the Rogue River to the north boundary of Section 32, T35S, R1W; thence east along a line to the point of beginning.

(2) "Charcoal Producing Plant" means an industrial operation which uses the destructive distillation of wood to obtain the fixed carbon in the wood.

(3) "Air Conveying System" means an air moving device, such as a fan or blower, associated ductwork, and a cyclone or other collection device, the purpose of which is to move material from one point to another by entrainment in a moving airstream.

(4) "Particulate Matter" means any matter, except uncombined water, which exists as a liquid or solid at standard conditions.

(5) "Standard Conditions" means a temperature of 60 degrees Fahrenheit (15.6 degrees Celsius) and a pressure of 14.7 pounds per square inch absolute (1.03 Kilograms per square centimeter).

(6) "Wood Waste Boiler" means equipment which uses indirect heat transfer from the products of combustion of wood waste to provide heat or power.

(7) "Veneer Dryer" means equipment in which veneer is dried.

(8) "Wigwam Waste Burner" means a burner which consists of a single combustion chamber, has the general features of a truncated cone, and is used for the incineration of wastes.

(9) "Collection Efficiency" means the overall performance of the air cleaning device in terms of ratio of weight of material collected to total weight of input to the collector.

(10) "Domestic Waste" means combustible household waste, other than wet garbage, such as paper, cardboard, leaves, yard clippings, wood, or similar materials generated in a dwelling housing four (4) families or less, or on the real property on which the dwelling is situated.

(11) "Open Burning" means burning conducted in such a manner that combustion air and combustion products may not be effectively controlled including, but not limited to, burning conducted in open outdoor fires, burn barrels, and backyard incinerators.

(12) "Dry Standard Cubic Foot" means the amount of gas that would occupy a volume of one cubic foot, if the gas were free of uncombined water at standard conditions.

(13) "Criteria Pollutants" means Particulate Matter, Sulfur Oxides, Nonmethane Hydrocarbons, Nitrogen Oxides, or Carbon Monoxide, or any other criteria pollutant established by the U.S. Environmental Protection Agency.

(14) "Facility" means an identifiable piece of process equipment. A stationary source may be comprised of one or more pollutant-emitting facilities.

(15) "Lowest Achievable Emission Rate" or "LAER" means, for any source, that rate of emission which is the most stringent emission limitation which is achieved in practice or can reasonably be expected to occur in practice by such class or category of source taking into consideration the pollutant which must be controlled. This term applied to a modified source means that lowest achievable emission rate for that portion of the source which is modified. LAER shall be construed as nothing less stringent than new source performance standards.

(16) "Modified Source" means any physical change in, or change in the method of, operation of a stationary source which increases the potential emission of criteria pollutants over permitted limits, including those pollutants not previously emitted and regardless of any emission reductions achieved elsewhere in the source:

(a) A physical change shall not include routine maintenance, repair, and replacement.

(b) A change in the method of operation, unless limited by previous permit conditions, shall not include:

(A) An increase in the production rate, if such increase does not exceed the operating design capacity of the source;

(B) Use of an alternative fuel or raw material, if prior to December 21, 1976, the source was capable of accommodating such fuel or material; or

(C) Change in ownership of a source.

(17) "New Source" means any source not previously existing or permitted in the Medford-Ashland Air Quality Maintenance Area on the effective date of these rules.

(18) "Offset" means the reduction of the same or similar air contaminant emissions by the source:

(a) Through in-plant controls, change in process, partial or total shut-down of one or more facilities or by otherwise reducing criteria pollutants; or

(b) By securing from another source or, through rule or permit action by DEQ, in an irrevocable form, a reduction in emissions similar to that provided in subsection (a) of this section.

(19) "Source" means any structure, building, facility, equipment, installation or operation, or combination thereof, which is located on one or more contiguous or adjacent

OREGON ADMINISTRATIVE RULES
CHAPTER 340, DIVISION 30 — DEPARTMENT OF ENVIRONMENTAL QUALITY

properties and which is owned or operated by the same person, or by persons under common control.

(20) "Volatile Organic Compound", (VOC), means any compound of carbon that has a vapor pressure greater than 0.1 mm of Hg at standard conditions (temperature 20 °C, pressure 760 mm of Hg). Excluded from the category of Volatile Organic Compound are carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and those compounds which the U.S. Environmental Protection Agency classifies as being of negligible photochemical reactivity which are methane, ethane, methyl chloroform, and trichlorotrifluoroethane.

(21) "Department" means Department of Environmental Quality.

(22) "Emission" means a release into the outdoor atmosphere of air contaminants.

(23) "Person" includes individuals, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the state and any agencies thereof, and the federal government and any agencies thereof.

(24) "Veneer" means a single flat panel of wood not exceeding 1/4 inch in thickness formed by slicing or peeling from a log.

(25) "Opacity" means the degree to which an emission reduces transmission of light and obscures the view of an object in the background.

(26) "Fugitive emissions" means dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof not easily given to measurement, collection and treatment by conventional pollution control methods.

(27) "Hardboard" means a flat panel made from wood that has been reduced to basic wood fibers and bonded by adhesive properties under pressure.

(28) "Particleboard" means matformed flat panels consisting of wood particles bonded together with synthetic resin or other suitable binders.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78; DEQ 9-1979, f. & ef. 5-3-79; DEQ 3-1980, f. & ef. 1-28-80; DEQ 14-1981, f. & ef. 5-6-81

Wood Waste Boilers

340-30-015 (1) No person shall cause or permit the emission of particulate matter from any wood waste boiler with a heat input greater than 35 million BTU/hr in excess of 0.050 grain per dry standard cubic foot (1.14 grams per cubic meter) of exhaust gas, corrected to 12 percent carbon dioxide, ~~as an annual average.~~

(2) No person owning or controlling any wood waste boiler with a heat input greater than 35 million BTU/hour shall cause or permit the emission of any air contaminant into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour equal to or greater than 20 percent opacity.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78; DEQ 29-1980, f. & ef. 10-29-80

Veneer Dryer Emission Limitations

340-30-020 (1) No person shall operate any veneer dryer such that visible air contaminants emitted from any dryer stack or emission point exceed:

- (a) A design opacity of 10%,
- (b) An average operating opacity of 10%, and
- (c) A maximum opacity of 20%.

Where the presence of uncombined water is the only reason for the failure to meet the above requirements, said requirements shall not apply.

(2) No person shall operate a veneer dryer unless:

(a) The owner or operator has submitted a program and time schedule for installing an emission control system which has been approved in writing by the Department as being capable of complying with subsections (1)(a), (b) and (c),

(b) The veneer dryer is equipped with an emission control system which has been approved in writing by the Department and is capable of complying with subsections (1)(b) and (c), or

(c) The owner or operator has demonstrated and the Department has agreed in writing that the dryer is capable of being operated and is operated in continuous compliance with subsections (1)(b) and (c).

(3) Each veneer dryer shall be maintained and operated at all times such that air contaminant generating processes and all contaminant control equipment shall be at full efficiency and effectiveness so that the emission of air contaminants is kept at the lowest practicable levels.

(4) No person shall willfully cause or permit the installation or use of any means, such as dilution, which, without resulting in a reduction in the total amount of air contaminants emitted, conceals an emission which would otherwise violate this rule.

(5) Where effective measures are not taken to minimize fugitive emissions, the Department may require that the equipment or structures in which processing, handling and storage are done, be tightly closed, modified, or operated in such a way that air contaminants are minimized, controlled, or removed before discharge to the open air.

(6) Air pollution control equipment installed to meet the opacity requirements of section (1) of this rule shall be designed such that the particulate collection efficiency can be practicably upgraded.

(7) Compliance with the emission limits in section (1) of this rule shall be determined in accordance with the Department's Method 9 on file with the Department as of November 16, 1979.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78; DEQ 3-1980, f. & ef. 1-28-80

Air Conveying Systems

340-30-025 All air conveying systems emitting greater than 10 tons per year of particulate matter to the atmosphere at the time of adoption of these rules shall, with the prior written approval of the Department, be equipped with a control system with collection efficiency of at least 98.5 percent.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78

Wood Particle Dryers at Particleboard Plants

340-30-030 No person shall cause or permit the total emission of particulate matter from all wood particle dryers at a particleboard plant site to exceed 0.40 pounds per 1,000 square feet of board produced by the plant on a 3/4" basis of finished product equivalent ~~as an annual average.~~

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78; DEQ 14-1981, f. & ef. 5-6-81

Hardboard Manufacturing Plants

340-30-031 No person shall cause or permit the total emissions of particulate matter from all facilities at a hardboard plant to exceed 0.25 pounds per 1,000 square feet of hardboard produced on a 1/8" basis of finished product equivalent ~~as an annual average.~~

Stat. Auth.: ORS Ch. 468

Hist: DEQ 14-1981, f. & ef. 5-6-81

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Wigwam Waste Burners

340-30-035 No person owning or controlling any wigwam burner shall cause or permit the operation of the wigwam burner.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78; DEQ 29-1980, f. & ef. 10-29-80

Charcoal Producing Plants

340-30-040 (1) No person shall cause or permit the emission of particulate matter from charcoal producing plant sources including, but not limited to, charcoal furnaces, heat recovery boilers, and wood dryers using any portion of the charcoal furnace off-gases as a heat source, in excess of a total from all sources within the plant site of 10.0 pounds per ton of charcoal produced (5.0 grams per Kilogram of charcoal produced) as an annual average.

(2) Emissions from char storage, briquet making, boilers not using charcoal furnace off-gases, and fugitive sources are excluded in determining compliance with section (1).

(3) Charcoal producing plants as described in section (1) of this rule shall be exempt from the limitations of 340-21-030(1) and (2) and 340-21-040 which concern particulate emission concentrations and process weight.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78

Control of Fugitive Emissions

340-30-043 (1) Large sawmills, all plywood mills and veneer manufacturing plants, particleboard and hardboard plants, charcoal manufacturing plants, stationary asphalt plants and stationary rock crushers shall prepare and implement site-specific plans for the control of fugitive emissions. (The air contaminant sources listed are described in OAR 340-20-155, Table 1, paragraphs 10a, 14a, 14b, 15, 17, 18, 29, 34a and 42a, respectively.)

(2) Fugitive emission control plans shall identify reasonable measures to prevent particulate matter from becoming airborne. Such reasonable measures shall include, but not be limited to the following:

(a) Scheduled application of asphalt, oil, water, or other suitable chemicals on unpaved roads, log storage or sorting yards, materials stockpiles, and other surfaces which can create airborne dust;

(b) Full or partial enclosure of materials stockpiled in cases where application of oil, water, or chemicals are not sufficient to prevent particulate matter from becoming airborne;

(c) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;

(d) Adequate containment during sandblasting or other similar operations;

(e) Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne; and

(f) Procedures for the prompt removal from paved streets of earth or other material which does or may become airborne.

(3) Fugitive emission control plans shall be prepared and implemented in accordance with the schedule outlined in OAR 340-30-045.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 6-1983, f. & ef. 4-18-83

Requirement for Operation and Maintenance Plans

340-30-044 (1) Operation and Maintenance Plans shall be prepared by all holders of Air Contaminant Discharge Permits except minimal source permits and special letter permits. All sources subject to regular permit requirements shall be subject to operation and maintenance requirements.

(2) The purposes of the operation and maintenance plans are to:

(a) Reduce the number of upsets and breakdowns in particulate control equipment;

(b) Reduce the duration of upsets and downtimes; and

(c) Improve the efficiency of control equipment during normal operations.

(3) The operation and maintenance plans should consider, but not be limited to, the following:

(a) Personnel training in operation and maintenance;

(b) Preventative maintenance procedures, schedule and records;

(c) Logging of the occurrence and duration of all upsets, breakdowns and malfunctions which result in excessive emissions;

(d) Routine follow-up evaluation of upsets to identify the cause of the problem and changes needed to prevent a recurrence;

(e) Periodic source testing of pollution control units as required by air contaminant discharge permits;

(f) Inspection of internal wear points of pollution control equipment during scheduled shutdowns; and

(g) Inventory of key spare parts.

(4) The operation and maintenance plan shall be prepared and implemented in accordance with the schedule outlined in OAR 340-30-045.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 6-1983, f. & ef. 4-18-83

Compliance Schedules

340-30-045 Sources affected by these rules shall comply with each increment of progress as soon as practicable but in no case later than the dates listed in Table 1.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78; DEQ 29-1980, f. & ef. 10-29-80; DEQ 14-1981, f. & ef. 5-6-81; DEQ 6-1983, f. & ef. 4-18-83

Continuous Monitoring

340-30-050 The Department may require the installation and operation of instruments and recorders for measuring emissions and/or the parameters which affect the emission of air contaminants from sources covered by these rules to ensure that the sources and the air pollution control equipment are operated at all times at their full efficiency and effectiveness so that the emission of air contaminants is kept at the lowest practicable level. The instruments and recorders shall be periodically calibrated. The method and frequency of calibration shall be approved in writing by the Department. The recorded information shall be kept for a period of at least one year and shall be made available to the Department upon request.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78

Source Testing

340-30-055 (1) The person responsible for the following sources of particulate emissions shall make or have made tests to determine the type, quantity, quality, and duration of emissions, and/or process parameters affecting emissions, in conformance with test methods on file with the Department at the following frequencies: Source Test Frequencies:

(a) Wood Waste Boilers — Once every year;—

(b) Veneer Dryers — Once every year until January 1, 1983, and once every 3 years thereafter;

(c) Wood Particle Dryers at Hardboard and Particleboard Plants — Once every year;

(d) Charcoal Producing Plants — Once every year;—

with heat input greater than
35 million Btu/hr.

OREGON ADMINISTRATIVE RULES
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~~[*NOTE: If this test exceeds the annual emission limitation then three (3) additional tests shall be required at three (3) month intervals with all four (4) tests being averaged to determine compliance with the annual standard. No single test shall be greater than twice the annual average emission limitation for that source.]~~

(2) Source testing shall begin at these frequencies within 90 days of the date by which compliance is to be achieved for each individual emission source.

(3) These source testing requirements shall remain in effect unless waived in writing by the Department because of adequate demonstration that the source is consistently operating at lowest practicable levels.

(4) Source tests on wood waste boilers shall not be performed during periods of soot blowing, grate cleaning, or other operating conditions which may result in temporary excursions from normal.

(5) Source tests shall be performed within 90 days of the startup of air pollution control systems.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78

Total Plant Site Emissions

340-30-060 [DEQ 4-1978, f. & ef. 4-7-78;
Repealed by DEQ 25-1981, f. & ef. 9-8-81]

New Sources

340-30-065 New sources shall be required to comply with rules 340-30-015 through 340-30-040 immediately upon initiation of operation.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78

Open Burning

340-30-070 No open burning of domestic waste shall be initiated on any day or at any time when the Department advises fire permit issuing agencies that open burning is not allowed because of adverse meteorological or air quality conditions.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 4-1978, f. & ef. 4-7-78

Emission Offsets

340-30-110 [DEQ 9-1979, f. & ef. 5-3-79;
Repealed by DEQ 25-1981, f. & ef. 9-8-81]

List of Affected Facilities

Medford Corporation
PO Box 550
Medford, OR 97501
Files No. 15-0048

Timber Products Co.
PO Box 269
Springfield, OR 97477
File No. 15-0025

Biomass One
PO Box 2590
White City, OR 97503
File No. 15-0159

Husky Industries Inc.
PO Box 2367
White City, OR 97501
File No. 15-0058

Boise Cascade
PO Box 8329
Boise, ID 83707
File No. 15-0004

Croman Corp
PO Box 610
Ashland, OR 97520
File No. 15-0016

Double Dee Lumber Co.
PO Box 3517
Central Point, OR 97502
File No. 15-0010

AS2439.C

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...
The Proposed Amendment to the Rule Affecting Source Testing of
Certain Stationary Sources Within the Medford-Ashland AQMA
NOTICE OF PUBLIC HEARING

Date Prepared: February 13, 1986
Hearing Date: May 1, 1986
Comments Due: May 9, 1986

WHO IS AFFECTED: Owners and operators of woodwaste-fired boilers with heat input greater than 35 million Btu/hr, and charcoal producing plants located in the Medford-Ashland Air Quality Maintenance Area (AQMA).

WHAT IS PROPOSED: The Department of Environmental Quality is proposing to amend OAR 340, Division 30, rules for source testing in the Medford-Ashland AQMA.

WHAT ARE THE HIGHLIGHTS: It is proposed to delete from the regulation the requirement for quarterly source testing for particulate emissions on sources which have shown an exceedance to the emission limit as demonstrated by the annual source test.

SPECIAL CONDITIONS: Regulated sources will be required to implement expeditious corrective action subsequent to a source test failure. Another test may be required to demonstrate compliance.

HOW TO COMMENT: Copies of the complete proposed rule package may be obtained from the Air Quality Division in Portland (522 S.W. Fifth Avenue) or the regional office nearest you. For further information contact Don L. Peters at (503) 229-5988.

A public hearing will be held before a hearings officer at:

10:00 a.m.
Thursday, May 1, 1986
Southwest Regional Office
DEQ Conference Room, 2nd Floor
Department of Environmental Quality
201 W. Main Street, Suite 2-D
Medford, OR 97501

Oral and written comments will be accepted at the public hearing. Written comments may be sent to the DEQ Air Quality Division, P.O. Box 1760, Portland, OR 97207, but must be received by no later than May 9, 1986.



P.O. Box 1760
Portland, OR 97207

8/10/82

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 ~~1-800-452-7010~~ and ask for the Department of Environmental Quality. 1-800-452-4011



**WHAT IS THE
NEXT STEP:**

After public hearing the Environmental Quality Commission may adopt rule amendments identical to the proposed amendments, adopt modified rule amendments on the same subject matter, or decline to act. The adopted rules will be submitted to the U. S. Environmental Protection Agency as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come in June 1986 as part of the agenda of a regularly scheduled Commission meeting.

A Statement of Need, Fiscal and Economic Impact Statement, and Land Use Consistency Statement are attached to this notice.

AS2439.A

RULEMAKING STATEMENTS

for

The Proposed Amendment to Modify the Source Testing Requirements in the Medford-Ashland Air Quality Maintenance Area

Pursuant to ORS 183.335, these statements provide information on the intended action to amend a rule.

STATEMENT OF NEED:

Legal Authority

This proposal amends OAR 340-30-015, -030, -031, -040, -055. It is proposed under authority of ORS 468.340.

Need for the Rule

The existing rule OAR 340-30-055 requires additional, more frequent source tests for large woodwaste boilers and charcoal plants within the Medford-Ashland AQMA, subsequent to an exceedance of the emission limit as demonstrated by the annual source test. Additional tests do not help to achieve compliance. Deleting this requirement for additional tests will help industry and the Department to achieve compliance and will reduce costs of testing to industry.

Principal Documents Relied Upon

1. OAR Chapter 340, Division 30, Specific Air Pollution Control Rules for the Medford-Ashland Air Quality Maintenance Area, made effective April 7, 1978.
2. The Source Testing Manual, Volume I, January 1976, revised periodically.

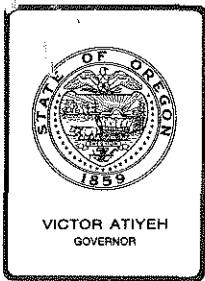
FISCAL AND ECONOMIC IMPACT STATEMENT:

The proposed amendment to delete quarterly testing would result in minimal economic impact. The cost to industry of contracting source testing consultants should be reduced.

LAND USE CONSISTENCY STATEMENT:

This proposed amendment will have no affect on land use.

AS2439.B



Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item F, March 14, 1986, EQC Meeting

Request for Authorization to Conduct Public Hearings on Proposed Rules to Establish Chapter 340, Division 120, Siting and Permitting Requirements for Hazardous Waste and PCB Treatment and Disposal Facilities, and to Amend Division 110, Management of PCB.

Background

During the 1985 session, the Oregon Legislature enacted Senate Bill 138. Later to be known as Oregon Laws 1985--Chapter 670, this legislation establishes siting standards for hazardous waste and polychlorinated biphenyl (PCB) treatment and disposal facilities. Chapter 670 also directs the Environmental Quality Commission to adopt implementing rules by April 9, 1986.

Only two licensed hazardous waste or PCB treatment and disposal facilities exist in Oregon. Chem Securities Systems, Inc. operates a hazardous waste and PCB disposal facility about 10 miles southwest of the north-central Oregon town of Arlington. Tektronix operates a hazardous waste treatment facility at its Beaverton complex.

Prior to the 1985 Oregon Legislative session, Chem Securities applied to the Department for a permit to operate an incinerator to destruct PCB at its Arlington site. During preparation of and public hearings on the proposed Air Contaminant Discharge Permit and other permits for the incinerator, it became apparent that the Commission and Department had the legal authority to address only the technical merits of the proposal. The Legislature debated various ways to address the broader aspects and impacts of siting the incinerator, and passed Chapter 670. Subsequently, Chem Securities withdrew its incinerator application.

Chapter 670 requires the Commission and Department to address several new areas when considering an application for a hazardous waste or PCB treatment or disposal facility. These include the size of the facility, the origin of the waste, the facility's need and location, transportation of waste to the facility and the applicant's qualifications. The Act includes several provisions which regulate PCB treatment and disposal and

incorporate PCB into existing state hazardous waste statute. A copy of Oregon Laws--Chapter 670 is attached (see Attachment 5).

The federal Resource Conservation and Recovery Act (RCRA) regulates hazardous waste management. However, RCRA leaves the details of regulating the siting of hazardous waste storage, treatment and disposal facilities to the states. In the last few years, very few facilities have been sited due in part to public fears and what is called the "Not In My Backyard" (NIMBY) syndrome. Because these facilities are needed across the nation, states have developed laws and rules addressing facility siting. Some states have adopted the authority to override local government decision-making when considering proposals to locate facilities.

Several states, particularly eastern states, have spent the last two to four years developing detailed siting processes for hazardous waste facilities. As expected, the process is different in each state but most processes generally include specific locational standards, requirements for environmental impact analysis and extensive public involvement. Most state siting processes are too new to be judged for their success.

Laws and rules that govern the siting of facilities generally seek to provide the public with a layer of protection for public health and safety and the environment in addition to existing pollution control laws and rules. The siting laws and rules also attempt to involve the public living near proposed facilities throughout the permitting process. Most states with siting regulations have concluded that facilities will not be accepted at the local level without an extra layer of protection and extensive public involvement.

As preparation for rule drafting, Department staff researched and reviewed the literature on the siting of hazardous waste facilities. Several reports compare state siting processes and regulations. Others analyze NIMBY and public participation. Most call for innovative approaches so needed facilities can be sited. A list of reports reviewed by the Department is attached (see Attachment 6).

The Department has worked to involve the public and interested parties in drafting these rules. The Chem Securities disposal facility is located in a rural county east of the Cascades, and I-84 and U.S. 97 are major transportation routes for hazardous waste. Therefore, involvement from east of the Cascades has been stressed.

To assist the Department in drafting rules, the Director appointed a 12 person policy advisory committee. Chaired by Judge John C. Beatty, Jr., the committee met eight times totalling over 50 hours. Each meeting was open to the public. The committee considered the major policy questions of Chapter 670, studied information on facility siting and reviewed preliminary rule drafts. A list of the policy advisory committee members is attached (see Attachment 7).

A technical advisors group was also appointed to assist the Department. The group was comprised of technical people from the Department and other state and local agencies. A list of the technical advisors is attached (see Attachment 8).

Department staff held public information meetings around the state to solicit input and focus attention on this rulemaking process. Meetings were held in Portland, The Dalles, Pendleton, La Grande, Ontario, Burns, Klamath Falls, Bend, Eugene, Medford and Roseburg. Department staff met with 12 county commissions to discuss facility siting. More than 300 people asked to be placed on a mailing list for this rulemaking. The Department prepared three fact sheets describing Chapter 670, the rulemaking schedule and proposals for draft rules.

Several interested parties closely followed the Department's and committee's work and have commented throughout the process. Also, every county planning department was asked to review and comment on a preliminary draft of the rules.

Alternatives and Evaluation

Chapter 670 (S.B. 138) requires the Commission to adopt implementing rules. This report summarizes the important elements of what is being proposed and the alternatives considered by the Department and the policy advisory committee. The principal effects of what is being proposed are discussed, where applicable.

1. The Department and the committee addressed where to place the implementing rules. Hazardous waste management regulations are contained in Divisions 100 through 108 and PCB management regulations are contained in Division 110. At first, staff included the proposed rules at several locations in these existing divisions. The committee recommended separating the proposed rules from the existing rules. The proposed rules were then placed in a new division (Division 120) where they would apply both to hazardous waste and PCB treatment and disposal facilities. The proposed Division 120 is attached (see Attachment 1).

Divisions 100 through 108 incorporate federal rules by reference and only include rules when the state program is different from the federal program. However, Division 110 reprints most of the federal rules of 40 CFR 761 while including a few additional rules. Both Division 110 and 40 CFR 761 are attached (see Attachments 9 and 10). To make Division 110 consistent with Divisions 100-108, the proposed PCB management rules would adopt 40 CFR 761 by reference and include only rules when the state program is different from the federal program. The rules would include provisions for PCB management as required by Chapter 670. The proposed amended Division 110 is attached (see Attachment 2).

2. The rules would expand upon and clarify Chapter 670. One objective of the Department in this rule drafting is to create a procedure for siting that implements the law smoothly and understandably. Another objective is to

gain public confidence in the procedure. A third objective is to reject inappropriate proposals or sites at the earliest possible date so that the applicant, the Department and local government do not expend unnecessary resources.

Two basic alternatives exist for implementing Chapter 670. Rules could provide fixed exclusionary standards for a proposed facility site to provide added protection for the public health and safety and the environment. Or, rules could require an applicant to demonstrate through an environmental impact analysis that the proposed facility site provides added protection for public health and safety and the environment as required by Chapter 670.

The draft rules blend the two approaches. A few exclusionary standards would be part of the first step of the application procedure. Several additional criteria would be considered in the second step of the application procedure to show land use compatibility. However, exceptions to these additional criteria could occur if the applicant demonstrates that public health and safety and the environment are adequately protected.

3. Chapter 670 allows the Commission to determine the classes of hazardous waste and PCB treatment and disposal facilities which shall be subject to the implementing rules. Note that the hazardous waste management rules of Division 100 to 110 would continue to apply to all hazardous waste and PCB treatment and disposal facilities. Through the implementing rules of Chapter 670, the Commission can determine which classes of facilities will be subject to the additional requirements of Chapter 670 and Division 120.

Section (2) of Rule 340-120-001 would make treatment and disposal facilities off the site of waste generation and land disposal facilities on the site of waste generation subject to all of the provisions of Division 120. Off-site facilities are typically large commercial facilities that serve many generators. Section (3) of Rule 340-120-001 would make hazardous waste and PCB facilities, except land disposal facilities, on the site of waste generation subject to only these Division 120 provisions: 340-120-010(2)(c), Technology and Design; 340-120-010(2)(e), Property Line Setback; 340-120-010(2)(g), Owner and Operator Capability; 340-120-010(2)(h), Compliance History; 340-102-020, Community Participation; and 340-120-030, Permit Application Fee. On-site facilities are non-commercial facilities where waste generators manage their own waste.

Those who favor applying none or only a few of the provisions of Chapter 670 and Division 120 to on-site facilities say that to minimize transporting waste, on-site facilities should be encouraged. Also on-site facilities would be supplemental to other manufacturing activities and would generally handle lesser volumes of waste than off-site facilities. On-site facilities would remain subject to the extensive waste management requirements of Divisions 100 to 110. Those who favor making on-site facilities subject to all of the Division 120 provisions say that whether a facility is on or off-site does not necessarily determine its environmental impact or public acceptability.

For example, this rule would require on-site chemical treatment like what occurs at Tektronix at Beaverton to meet only those provisions of Division 120 that apply to on-site facilities. The rule would require off-site incinerators like what was proposed by Chem Securities to meet all of the provisions of Division 120. An alternative to Rule 340-120-001 would be to make all facilities subject to all of Division 120.

4. Rule 340-120-005 would establish an additional step in the application procedure for facilities required to meet all of the siting provisions. Presently, an applicant must obtain a land use compatibility statement, usually from local government, and then submit a detailed technical application to the Department. The additional step (requesting an Authorization to Proceed) would be the first step and is a screen to eliminate inappropriate sites or proposals from further consideration. The screen contains several criteria that must be met to obtain an Authorization to Proceed. The screen provides an extra layer of protection for public health and safety and the environment and includes many of the provisions of Chapter 670.

The Department was careful to not use the word "approval" at the first step. Concern has been voiced that the applicant and public might assume that passing the first step would mean a permit would be granted. Obtaining a Authorization to Proceed does not in any way imply that an applicant will receive land use approval or a technical permit.

5. Rule 340-120-005 would also establish a period for the Department to accept applications, as required by Chapter 670. The Act allows the Commission to wait as long as 270 days after rule adoption to begin the application period. The committee recommended and the Department determined that the application process should begin as soon as possible so a potential applicant is not needlessly delayed.

The initial period for an applicant to submit an Authorization to Proceed request would open May 15, 1986 and would close January 1, 1987. After the closure, the Department and Commission could act on any of the requests received. Following the initial period, the Department could not accept a new request until the Commission determines that there is a need for an additional facility. This finding of need is required by Chapter 670.

6. Section 9 of Rule 340-120-005 would require that most of the criteria of the Authorization to Proceed apply to exiting facilities upon permit renewal. Chem Securities expressed a concern to the committee that the Property Line Setback criterion would impact its Arlington facility because present and planned landfills are adjacent to its east property line. Chapter 670 prohibits the implementing rules adopted by the Commission from applying to Chem Securities during its present permit renewal, but the rules could apply during the next permit renewal. The permit can be issued for any period of time to a maximum of ten years.

The duration of Chem Securities next permit has not been determined. Therefore, the policy advisory committee chose eight years as a realistic period to delay applying the Property Line Setback criterion to Chem Securities. This eight year period would give the company time to either acquire additional land or replan the use of its site. Chem Securities' representatives took part in the committee's deliberations on this matter and believe that if additional land cannot be acquired, it would have to significantly modify its disposal plans.

The Property Line Setback criterion would apply upon rule adoption to the treatment facility at Tektronix. However, the company has indicated that the proposed setback is already being met.

7. Rule 340-120-010 contains the criteria which would have to be met to obtain an Authorization to Proceed. The criteria are Need, Capacity, Technology and Design, Location, Property Line Setback, Groundwater Protection, Owner and Operator Capability and Compliance History. The Capacity criterion generated the most discussion within the policy advisory committee. The Capacity criterion implements Section 4(4) of Chapter 670. This is the key section of the Act and perhaps the most difficult one to address.

Much of the concern about Chem Securities' proposed PCB incinerator focused on its service area. Waste originating in states west of the Mississippi was to be brought to the facility via the company's Kettleman Hills, California facility. The Legislature did not want facilities in Oregon serving that large of a service area.

The Commerce Clause of the U.S. Constitution limits each state's ability to restrict the free movement of commerce between states. For example, Oregon probably could not prevent waste originating in another state from coming to a facility located in Oregon. However, the Commerce Clause and federal law do not require the state to have facilities to serve waste originating in other states.

It makes sense to approach hazardous waste treatment and disposal on a regional basis. In December 1985, Congress approved several interstate compacts for groups of states so that low-level radioactive waste disposal could be managed regionally. Congressional approval is needed to exempt the compacts from the Commerce Clause. The compact for eight northwest states prohibits low-level radioactive waste originating outside the compact states from being disposed of at facilities in states that are part of the compact. A copy of the Northwest Interstate Compact on Low-Level Radioactive Waste (Northwest Compact) is attached (see Attachment 11).

Only Article IV, Section 5 of the Northwest Compact applies to hazardous waste. Section 5 requires states with hazardous waste facilities to allow access to those facilities by generators in the other states of the compact. The Commerce Clause likely requires this access anyway.

Rule 340-120-010(b) would place a minimum and maximum size on each off-site commercial facility. The minimum size addresses Chapter 670's direction to the Commission to limit the number of facilities in Oregon. For example a commercial incinerator would have to be designed large enough to treat the identified incinerable waste generated in Oregon.

As drafted in Rule 340-120-010(b), the language governing the maximum size of a facility is as follows:

"The facility shall not be sized greater than needed to treat or dispose of waste generated, or reasonably projected to be generated over the next 10 years, in states that are parties to the Northwest Interstate Compact on Low-Level Radioactive Waste Management."

The maximum size addresses Chapter 670's direction to the Commission to limit the size of a facility and where legally possible, its service area. For example, a commercial incinerator could be no larger than needed to treat incinerable waste generated in the states which are parties to the Northwest Compact.

The policy advisory committee discussed an alternative to the draft rule. Several committee members were concerned that language defining maximum capacity would result in only Oregon facilities handling the waste generated in the Northwest Compact states. Alternative language is as follows:

"The facility shall not be sized greater than needed to treat or dispose of waste generated, or reasonably projected to be generated over the next 10 years in Oregon or in states that are parties to a binding interstate compact which includes Oregon, and specifically written for hazardous waste."

This language would limit the size of a facility to what is needed to manage waste generated in Oregon, until a hazardous waste compact is approved by Congress. The language may initiate regional discussions on hazardous waste management and prevent Oregon facilities from being sized to serve other states until a regional approach is agreed upon.

The rule language of 340-120-010(2)(b)(C) would direct the Commission to favor a proposed facility which is sized to minimize the risk of transporting waste in Oregon, if the criteria of 340-120-010(2) are met. Indirectly, this language would encourage applicants to size a proposed facility closer to what is needed to manage Oregon waste rather than what is needed to manage Northwest Compact state waste. This may be very important if the Department and Commission consider competing applications.

The language governing capacity is a key part of the proposed rules. The Department especially encourages comments on the proposed language at the public hearings or in writing during the public comment period.

8. The Property Line Setback criterion would provide a buffer between waste management activities and surrounding land. A 250 foot separation distance would be required for on-site treatment or disposal facilities such as the facility at Tektronix. This distance would apply to an on-site incinerator as well.

Off-site facilities, except land disposal facilities, would have at least a 500 foot separation distance. For example, an off-site commercial incinerator, such as the one proposed by Chem Securities, would have at least this separation distance. Land disposal facilities, such as the disposal facility operated by Chem Securities, would have at least a 1000 foot separation distance.

The primary objective for a separation distance is to provide an extra margin of safety for the unplanned or unpredictable accident. The separation distance also protects adjacent land uses. Some committee and technical group members believe draft rule separation distances are not great enough. Since Oregon will likely host no more than a couple facilities, a greater separation distance for new facilities might be appropriate.

Another alternative could create a greater separation distance but allow some uses within the separation. For example, a quarter or half mile separation could be required for off-site incinerators and disposal facilities but uses other than residential, commercial and/or agricultural uses could occur within the separation.

While the Property Line Setback criterion would be a continuous requirement, the Location criterion would apply only at the time of siting a facility. The committee discussed the problem of development occurring too close to a facility once it is operating, but believed the local land use authority was the proper body to address future development.

9. Rule 340-120-015 would list the criteria that must be considered as part of the findings for land use compatibility. Several criteria must be addressed to implement Chapter 670 and to maximize protection of public health and safety and the environment. Many of these criteria are already defined in local comprehensive plans.

Before issuing a permit, the Department is ultimately responsible for determining if a proposed hazardous waste or PCB facility is compatible with the statewide land use goals and the local comprehensive plan. However, the Department expects local government to determine the compatibility and to make findings supporting its decision. This process is governed by OAR Chapter 660, Division 31, State Permit Compliance and Compatibility.

Rule 340-120-015 would give local government the opportunity to consider the listed criteria when findings are made to support a compatibility

decision. If local government does not address the criteria during its land use compatibility review, the Department would consider the criteria and make appropriate findings.

The criteria of this rule would not be fixed and exceptions to the criteria would be allowed. An alternative would require these criteria to be met, not considered. The Department has chosen the draft language to allow flexibility in the siting process.

Each county planning department was asked to comment on 340-120-015 and particularly whether these criteria should be considered or met. Of the half dozen comments received so far, one planning director favored mandatory criteria while the others were generally comfortable with the flexible criteria.

10. Rule 340-120-015(1)(a) would separate a proposed facility from an urban growth boundary to minimize the potential for public exposure. Originally staff offered a much more limiting rule to the committee. A proposed facility would have been at least three miles from the urban growth boundary and one additional mile for each 20,000 people inside the boundary, to a maximum of 15 miles. This alternative would more likely assure that urban growth does not someday surround a facility. Since this criterion must be considered, not met, the distance could be less if conditions warrant.

The committee supported the present draft rule language because the alternative would exclude much of the Willamette Valley from consideration. The alternative would be difficult to sell to Eastern Oregonians and would be predicting urban growth patterns too distant in the future. Another alternative to this rule would be to limit the siting of a facility to an area that has a population density less than so many people per acre or square mile. This alternative may be difficult to apply.

11. Rule 340-120-020 would require community participation during a facility application review. Meaningful involvement by the host community is essential to gain local acceptance and approval. The Department and policy advisory committee reviewed several studies and reports which emphasized the importance of community participation. These documents generally concluded:

- a. Residents near a proposed facility must be involved in the permitting process from the very start;
- b. These residents often believe that government is not looking out for their interests;
- c. A local committee may be the best method to provide a forum for citizen questions and concerns;
- d. The local community should receive benefits to offset the (perceived) liability of hosting a facility.

Section (2) of Rule 340-120-020 would require a local committee to provide a forum for citizen comments and concerns about a proposed facility and to prepare a written report summarizing these concerns and the manner in which the company is addressing them. The committee would function as an advisory committee to the Department with minor expenses like travel and meal costs paid by the Department.

The local committee would be optional once a facility is sited. An alternative would be to maintain a local committee to provide an ongoing forum for public information, questions and concerns about a facility. Since an ongoing committee will not be needed in every case, the draft rule would allow the Director to continue a committee as needed.

The policy advisory committee debated the function, composition and responsibilities of a local committee. The advisory committee favored giving the local committee as much independence as possible and even its own funding. The advisory committee supported providing funds from the facility's permit application fee and favored limiting the committee's spending of the funds only when it involved litigation. However, the Department does not have the statutory authority to grant funds to an independent local committee.

During the public comment period, the Department is interested in receiving comments on the concept of an independent local committee which is funded by the Department or from some other source. After receiving comments, the Department will study the options available for granting the committee funds and determine if new legislation is desirable for this purpose.

12. Rule 340-120-020(5) would recommend that local government and an applicant consider negotiating an agreement to address a proposed facility's potential impact. A community is usually reluctant to host a facility because often its residents believe they are assuming a burden for the benefit of others. Unless this perceived burden is addressed, residents near a proposed site may not accept a facility under any circumstances.

Some states are attempting to address the perceived burden by requiring mitigating measures in the host community. For example, New Jersey levies a 5% gross receipts fee on waste entering a disposal facility and passes the fee on to the host community. Other states require the applicant and host community to address mitigation before approving a facility. While the approaches may be different, the objective is to create a process that enhances the chance of siting a needed facility.

For example, an agreement between the applicant and local government could address those things that might need change or improvement because of the new facility's real or perceived burden on a local community. An agreement could address the adequacy of or need for fire, police and health department training and equipment, special community monitoring, and transportation safety. These have and will continue to be of significant public concern when a new facility is proposed and an agreement is one way to address them in a positive and constructive manner.

The Department and Commission do not have the statutory authority to require an agreement between applicants and local government. Therefore, Section (5) of Rule 340-120-020 would only recommend that such an agreement be negotiated. The Department would appreciate comments on whether such statutory authority should be sought.

13. Rule 340-120-025 addresses the transportation of waste. Based upon public input to date, the transportation of waste is of greater concern than any other facility siting issue. The Oregon Public Utility Commissioner has primary authority over transportation of hazardous materials and waste. Laws enacted by the 1985 Legislature give the Public Utility Commissioner and the State Department of Transportation new powers to regulate transportation of hazardous materials and waste.

Hazardous waste accounts for less than five percent of the hazardous materials and waste transported on the state's highways. The Department has no authority to regulate waste transporters. Still, the public wants the Department to do what it can to promote safe transportation of waste.

To address this concern and the transportation language of Chapter 670, the Department has drafted 340-120-015(1)(h) and 340-120-025. Rule 340-120-015 lists the criteria to be considered during the determination of land use compatibility. Subsection (1)(h) requires appropriate highway or transportation departments to review routes to a proposed facility for safety. The criterion states that their recommendations for improvements should be implemented before the facility operates. While not defining who would pay for the improvements, the criterion would address highway safety near the facility.

Rule 340-120-025 would require a facility owner or operator to own or contract for a spill response team to respond to spills within 50 miles of the facility. Also, if a transporter bringing waste to the facility fails to arrange for a spill cleanup, the facility owner or operator would have to arrange for the cleanup.

The Department and committee first favored a rule to require each hazardous waste transporter to have a cleanup team under contract. However, the Department does not have the legal authority to regulate waste transporters. Another alternative would be to have the facility operator have a cleanup team under contract for any waste traveling to the facility. Chem Securities objected to this alternative because of its potential increased liability. Rule 340-120-025 would apply to Chem Securities upon its next permit renewal.

14. PCB disposal is currently regulated by Division 110. The proposed rules would entirely delete the Division 110 text as it now exists, incorporate the federal rules of 40 CFR 761 by reference, and add language to implement Chapter 670.

Rule 340-110-070 would require an incinerator designed to dispose of PCB to also incinerate hazardous waste. Chapter 670 requires a PCB incinerator to incinerate a reasonable ratio of hazardous waste. The Department considered two alternatives to implement Chapter 670. The ratio of hazardous waste could be set in a rule. Or, the Commission could determine a reasonable ratio for each proposed facility. The Department favors establishing a minimum ratio of 50% now.

Both Rules 340-110-070(5) and 075(2) would require an application for PCB disposal to include the same information already required for hazardous waste incineration and disposal.

Summation

1. The Commission is required to adopt implementing rules for Oregon Laws 1985--Chapter 670 within 270 days of the effective date of the Act.
2. Chapter 670 requires the Department and Commission to address several new areas when considering an application for a hazardous waste or PCB treatment or disposal facility.
3. The Department proposes that the Commission adopt a new division containing siting and permitting requirements for hazardous waste and PCB treatment and disposal facilities.
4. The Department proposes that the existing rule division managing PCB be replaced with a rule division which primarily references the federal rules of 40 CFR 761.
5. All hazardous waste and PCB facilities off the site of waste generation and land disposal facilities on the site of waste generation would be subject to all of the new siting and permitting requirements. Other than land disposal facilities, facilities on the site of waste generation would be subject to only some of the new requirements.

6. An additional step in the application procedure would be established to eliminate inappropriate proposals or sites from further consideration. This screening step, called requesting an Authorization to Proceed, mandates that certain criteria be met before applying for local land use approval and a permit from the Department.
7. An initial application period for proposed facilities would be established, beginning May 15, 1986 and ending January 1, 1987. Applications accepted after January 1, 1987 must be preceded by a Commission finding that a need exists for a new facility.
8. A facility would not be sized less than what is needed, in conjunction with existing facilities, to treat or dispose of waste generated, or projected to be generated over the next ten years, in Oregon. A facility would not be sized greater than needed to treat or dispose of waste generated, or reasonably projected to be generated over the next ten years, in states that are parties to the Northwest Interstate Compact on Low-Level Radioactive Waste Management.
9. A property line setback of 250 feet would be required for on-site treatment and disposal facilities including incinerators. A 500 foot setback would be required for off-site facilities, other than land disposal facilities. A 1000 foot setback would be required for land disposal facilities.
10. A property line setback would be required for existing facilities. The Chem Securities Systems, Inc. disposal facility would have to meet the property line setback requirement eight years from rule adoption.
11. Land use compatibility findings would have to consider several criteria to protect public health and safety and the environment.
12. A site-specific local committee would be appointed to encourage community participation during a facility application review. The committee could be continued by the Director to provide a forum for the public once a facility operates.
13. An agreement between an applicant and the local government is recommended to address a proposed facility's potential local impact and perceived burden.
14. An incinerator licensed to burn PCB would have to burn more hazardous waste than PCB.

PROPOSED

DIVISION 120

HAZARDOUS WASTE MANAGEMENT

Additional Siting and Permitting Requirements for Hazardous Waste and PCB
Treatment and Disposal Facilities

- | | |
|-------------|--------------------------------------------------|
| 340-120-001 | Purpose and Applicability. |
| 340-120-005 | Permitting Procedure. |
| 340-120-010 | Contents of an Authorization to Proceed Request. |
| 340-120-015 | Land Use Compatibility Findings. |
| 340-120-020 | Community Participation. |
| 340-120-025 | Off-Site Transportation Emergencies. |
| 340-120-030 | Permit Application Fee. |

Authority: Oregon Laws 1985, Chapter 670; ORS 468, including 468.020; ORS 466, including 466.020; and ORS 183.

Purpose and Applicability

340-120-001(1) To protect the public health and safety and the environment, the Commission finds that it is in the state's best interest to more fully regulate and review proposals to treat or dispose of hazardous waste and PCB. The purpose of this Division is to establish a supplemental siting and permitting procedure for most types of hazardous waste and PCB treatment and disposal facilities.

(Comment: Under Federal law hazardous waste incineration and other treatment techniques are considered "treatment" and PCB incineration and other treatment techniques are considered "disposal." To be consistent, Division 120 utilizes the same definitions).

(2) All parts of this Division apply to new:

(a) Hazardous waste and PCB treatment and disposal facilities located off the site of waste generation (off-site); and

(b) Hazardous waste and PCB land disposal facilities located on the site of waste generation (on-site).

(3) New hazardous waste and PCB treatment and disposal facilities, other than land disposal facilities, located on the site of waste generation (on-site), are only subject to:

- 340-120-010(2)(c) Technology and Design;
- 340-120-010(2)(e) Property Line Setback;
- 340-120-010(2)(g) Owner and Operator Capability
- 340-120-010(2)(h) Compliance History;

340-120-020 Community Participation;
340-120-030 Permit Application Fee.

(Comment: With Department approval, a facility can receive incidental quantities of waste from off the site and be an on-site facility).

(4) This Division does not apply to:

(a) Portable hazardous waste and PCB treatment and disposal facilities that are located on a single site of generation (on-site) less than 15 days each year;

(b) Hazardous waste and PCB treatment or disposal sites involved in remedial action under ORS 466 and Divisions 100 through 110 of this chapter;

(c) Facilities treating hazardous waste pursuant to the recycling requirements of 40 CFR 261.6;

(d) Emergency permits issued by the Director according to 40 CFR 270.61; and

(e) Facilities permitted by the Department to manage municipal or industrial solid waste, if the hazardous waste the facilities treat or dispose of is excluded from regulation by 40 CFR 261.5.

(5) The requirements of this Division are supplemental to those of Divisions 100 through 110 of this Chapter. The definitions of 340-100-010 and 340-110-003 apply to this Division.

Permitting Procedure

340-120-005(1) A three step permitting procedure is required for facilities listed in 340-120-001(2). The three steps are:

(a) Submit a request for and obtain an Authorization to Proceed from the Department;

(b) Submit a request for and obtain a Land Use Compatibility Statement from the local government with land use jurisdiction or as applicable, from the Department; and

(c) Submit a complete application for and obtain a treatment or disposal permit pursuant to Divisions 105, 106 and 110 of this Chapter from the Department, or as applicable, from the Commission.

(2) An initial period is established during which the Department shall accept requests for an Authorization to Proceed. The initial period begins May 15, 1986 and ends January 1, 1987. The Department shall wait until the end of the initial period before approving or denying any of the requests.

(3) Requests for an Authorization to Proceed received by the Department after January 1, 1987 must include information to allow the Commission to find there is a need for a new facility. The Department cannot approve an Authorization to Proceed request received after January 1, 1987 until the Commission makes this finding.

(4) Each request for an Authorization to Proceed will be reviewed for completeness by the Department within 90 days of its receipt. If an applicant fails to correct deficiencies within 90 days of written notice from the Department, the Department may deny the request.

(5) After obtaining an Authorization to Proceed and a Land Use Compatibility Statement, an applicant may apply for a hazardous waste or PCB treatment or disposal permit pursuant to Divisions 105, 106 and 110 of this Chapter.

(6) To retain an Authorization to Proceed, an applicant shall:

(a) Submit a request to the appropriate planning jurisdiction for the Land Use Compatibility Statement within 90 days of issuance of the Authorization to Proceed;

(b) Submit an application for a treatment or disposal permit to the Department within 6 months of issuance of the Land Use Compatibility Statement.

(7) If the Department or Commission denies the permit, the Authorization to Proceed is revoked.

(8) The owner of an existing facility with an effective permit must reapply according to the provisions of 340-105-010(4) before the expiration of the existing permit. Upon reapplication or upon requesting a permit modification:

(a) The applicant of a facility described in 340-120-001(2) shall demonstrate the criteria of 340-120-010(2)(a),(b),(c),(e),(g) and (h) and 340-120-025 are being met.

(b) The applicant of a facility described in 340-120-001(3) shall demonstrate that the Property Line Setback criterion of 340-120-010(2)(e) is being met.

(9) The Property Line Setback criterion of 340-120-010(2)(e) shall apply to the existing Chem Securities Systems, Inc. hazardous waste and PCB disposal facility eight years from the date the Commission adopts this rule.

Contents of an Authorization to Proceed Request.

340-120-010(1) An Authorization to Proceed request shall demonstrate that the proposed facility meets the criteria presented in 340-120-010(2). If the facility does not meet all of the criteria, the Department shall deny the request.

(2) Criteria that must be met to obtain an Authorization to Proceed:

(a) Need.

(A) The facility is needed because:

(i) Of a lack of treatment or disposal capacity to handle hazardous waste or PCB generated by Oregon companies; or

(ii) Its operation would result in a significantly higher level of protection of the public health and safety or environment; or

(iii) Its operation will significantly lower treatment or disposal costs to Oregon companies, excluding transportation costs within states that are parties to the Northwest Interstate Compact on Low-Level Radioactive Waste Management as set forth in ORS 469.930.

(B) The facility shall significantly add to the range of the hazardous waste or PCB handled or to the type of technology already employed at a permitted treatment or disposal facility in states that are parties to the Northwest Interstate Compact on Low-Level Radioactive Waste Management

(C) The Department may deny an Authorization to Proceed request if the Department finds that capacity at other treatment or disposal facilities negate the need for a particular facility in Oregon.

(b) Capacity.

(A) The facility shall not be sized less than what is needed, in conjunction with existing facilities, to treat or dispose of hazardous waste or PCB generated, or reasonably projected to be generated over the next 10 years, in Oregon.

(B) The facility shall not be sized greater than needed to treat or dispose of hazardous waste or PCB generated, or reasonably projected to be generated over the next 10 years, in states that are parties to the Northwest Interstate Compact on Low-Level Radioactive Waste Management.

(C) If all of the criteria of 340-120-010(2) are met, the Commission shall give preference to a proposed facility which is sized to minimize the risk of transporting waste in Oregon.

(c) Technology and Design. The facility shall use the best available technology as determined by the Department for treatment and disposal of hazardous waste and PCB. The facility shall use the highest and best practicable treatment and/or control as determined by the Department to protect environmental quality.

(d) Location.

(A) The facility shall be sited at least one mile from:

(i) Areas within urban growth boundaries as defined by ORS 197.295;

(ii) Wilderness, public open space, preserves or parks, private parks and recreational trails as designated or identified in the applicable local comprehensive plan or zoning maps;

(iii) Schools, churches, hospitals, nursing homes, retail centers, stadiums, auditoriums and residences not owned by the applicant.

(B) The Department may consider a lesser distance for (A)(ii) and (A)(iii) if the applicant demonstrates that the lesser distance adequately protects the public health and safety and the environment.

(e) Property Line Setback.

(A) Hazardous waste and PCB treatment and disposal facilities, other than land disposal facilities, on the site of waste generation shall have at least a 250 foot separation between active waste management areas and facilities, and property lines.

(B) Hazardous waste and PCB treatment and disposal facilities, other than land disposal facilities, off the site of waste generation shall have at least a 500 foot separation between active waste management areas and facilities, and property lines.

(C) Hazardous waste and PCB land disposal facilities shall have at least a 1,000 foot separation between active waste management areas and facilities, and property lines.

(f) Groundwater Protection.

(A) Using the Groundwater Quality Protection Evaluation Matrix as shown in Table 2 of this Division:

(i) Surface impoundments, land treatment facilities and waste piles shall only be located on an area rated as 2 or 3;

(ii) Landfills shall only be located on an area rated as 3.

(B) Hazardous waste and PCB facilities not listed in (A)(i) or (A)(ii) need not meet this criterion to obtain an Authorization to Proceed.

(g) Owner and Operator Capability. The owner, any parent company of the owner and the operator must demonstrate adequate financial and technical capability to properly construct and operate the facility. As evidence of financial capability, the following shall be submitted:

(A) Financial statements of the owner, any parent company of the owner, and the operator audited by an independent certified public accountant for three years immediately prior to the application;

(B) The estimated cost of construction and a plan detailing how the construction will be funded; and

(C) A three year projection, from the date the facility is scheduled to begin operating, of revenues and expenditures related to operating the facility. The projection should have sufficient detail to determine the financial capability of the owner, any parent company of the owner and the operator to properly operate the facility.

(h) Compliance History. The compliance history in owning and operating other similar facilities, if any, must indicate that the owner, any parent company of the owner and the operator have an ability and willingness to operate the proposed facility in compliance with the provisions of ORS 466 and any permit conditions that may be issued by the Department or Commission. As evidence of ability and willingness, the following shall be submitted:

(A) A listing of all responses to past violations identified by EPA or the appropriate state regulatory agency at any similar facility owned or operated by the applicant, owner, any parent company of the owner or operator; and

(B) Any written correspondence from EPA and the appropriate state regulatory agency which discusses the compliance history and present compliance status of any similar facility owned or operated by the applicant, owner, any parent company of the owner or operator.

Land Use Compatibility Findings.

340-120-015(1) For facilities listed in 340-120-001(2), the land use compatibility statement of 340-105-013 must include findings that at least considered the following criteria:

(a) To assure low density populations around a facility, the facility should be sited at least the following distances from an acknowledged urban growth boundary:

(A) One mile from areas within an urban growth boundary containing a population of 2500 people or less;

(B) Two miles from areas within an urban growth boundary containing a population between 2500 and 10,000 people; and

(C) Three miles from areas within an urban growth boundary containing a population of 10,000 people or greater.

(b) The facility should be sited at least one mile from the following, as designated or identified (if appropriate) in the comprehensive plan or on zoning maps:

(A) Schools, churches, hospitals, nursing homes, retail centers, stadiums, auditoriums or residences not owned by the applicant;

(B) Wilderness, public open space, preserves or parks, private parks and recreational trails;

(C) Scenic view sites;

(D) Federal and State scenic waterways;

(E) Destination resorts;

(F) Rural communities and rural residential areas;

(G) Public airports.

(c) The facility should be sited at least one quarter mile from the following, as designated or identified (if appropriate) in the comprehensive plan or on zoning maps;

(A) Perennial surface water (including rivers, streams, lakes, oceans, and reservoirs), estuaries and wetlands;

(B) Historic and cultural areas;

(C) Ecologically and scientifically significant natural areas;

(D) Municipal watersheds;

(E) Flood hazard areas;

(F) Slide hazard areas;

(G) Willamette River Greenway;

(H) Coastal shorelands, beaches and dunes.

(d) The proposed facility is allowable in the applicable zone and will comply with all applicable development standards in the local land use regulations.

(e) The facility would not significantly limit or prevent the use of adjacent lands for uses permitted or otherwise allowed in the applicable zone.

(f) Emergency services, including medical care, to respond to and address emergencies and accidents at the facility or involving wastes traveling on local transportation routes to the facility have been identified and their adequacy has been assessed.

(g) The facility would have more than one transportation route to it.

(h) The appropriate city, county and state highway or transportation departments have reviewed the local transportation routes to the facility for safety and their recommendations for improvements should be implemented prior to first waste receipt at the facility.

(2) The findings made according to Section (1) shall state if any of the criteria were not considered or will not be met. For each criterion that was not considered or will not be met, the findings shall give the justification to allow an exception to the criterion.

(3) The local government with land use jurisdiction should act on a land use compatibility request within 180 days after a complete request was submitted by the applicant. If local government does not wish to act on the compatibility request or address the criteria of

Section (1), the Department shall act on the request or prepare findings for the criteria. The Department is ultimately responsible for determining compliance with state land use goals the purpose of issuing a permit.

Community Participation.

340-120-020(1) The Commission finds that local community participation is important in the siting and in reviewing the design, construction and operation of hazardous waste and PCB treatment and disposal facilities.

(2) To encourage local participation in the siting of a proposed facility described in 340-120-001(2), the Director shall appoint and utilize a committee comprised at least partly of residents living near to, or along transportation routes to, the facility site. At least one half of the appointments shall be from a list of nominees submitted by the local government with land-use jurisdiction. The Director shall appoint the chairperson of the committee.

(3) The Director may appoint a committee to review a proposed facility described in 340-120-001(3).

(4) The Director may continue a committee authorized in Section (2) and (3) or appoint a new committee to review the operation of a facility once it is located and constructed.

(Comment: The committee shall provide a forum for citizen comments, questions and concerns about the site and facility and promote a dialogue between the community of the proposed facility and the company interested in siting the facility. The committee shall prepare a written report summarizing local citizen concerns and the manner in which the company is addressing these concerns. The report shall be considered by the Department and Commission and local government during the consideration of the proposed facility).

(5) The Department recommends that the local government and applicant consider negotiating an agreement appropriate for the proposed facility's potential local impact. The agreement might consider these and other issues:

(a) Training and equipping local fire, police and health department personnel to respond to accidents, spills and other emergencies;

(b) Special monitoring both on and off-site for worker and community health status;

(c) Road improvements and maintenance to assure safe transportation of waste to the site;

(d) Possible changes in property values near the site due to the proposed facility;

(e) A plan to resolve conflicts or disagreements that might develop between the facility operator and the community.

Off-Site Transportation Emergencies

340-120-025(1) An emergency response team owned by or under contract to the owner or operator of the facility shall be located within 25 miles of the facility. The team shall be capable of immediately responding to spills, occurring within 50 miles of the facility, of waste traveling to the facility. If the transporter of any waste traveling to the facility and within the state fails to cleanup any spill occurring within the state to the Department's satisfaction, the facility owner shall immediately arrange for such cleanup upon a request by the Department.

Permit Application Fee

340-120-030(1) The intent of the permit application fee is to cover the Department's costs, in investigating and processing the application. For new hazardous waste and PCB treatment and disposal facilities, the maximum application processing fee is \$70,000. For existing facilities, the maximum fee is \$50,000. These fees include the fees required by Table 1 of Division 105.

(2) Any portion of the application processing fee for a treatment and disposal facility which exceeds the Department's expenses in reviewing and processing the application shall be refunded to the applicant.

(3) The fee described in Section (1) is payable upon submission of an Authorization to Proceed request, if such a request is required, or a permit application.

TABLE 1

Matrix Legend

Uppermost Aquifer - The first body of saturated rock, alluvium, or other naturally occurring material that contains sufficient permeability to store, transmit, and yield sufficient quantities of water to wells or springs so that the wells can serve as a practical source of water.

Unconfined aquifer - Unconfined is synonymous with water table. A saturated geologic unit where the hydrostatic pressure at the upper surface of the water body is atmospheric.

Confined Aquifer - Confined is synonymous with artesian. A saturated geologic unit that contains water under sufficient hydrostatic pressure to cause the water level in a well to stand above the bottom of the overlying confining layer.

Aquitard - A saturated geologic unit which yields inappreciable quantities of water compared to an aquifer but through which appreciable leakage of water is possible.

Aquiclude - A saturated geologic unit which yields inappreciable quantities of water compared to an aquifer but through which appreciable leakage of water is not possible.

Hydraulic Conductivity (K) - The quantity of groundwater flowing through a waterbearing material in one unit of time through a unit cross-sectional area under a driving force of one unit of hydraulic head change per unit length. This is usually expressed as gallons per day per foot squared (gpd/ft^2), or feet per day (ft/day). This is an expression of a geologic unit's ability to transmit a fluid. In the matrix, K values refer to both the unsaturated zone above the aquifer and the saturated aquifer. High K's refer to formations which are rapidly draining, such as, gravels, sand, karst limestone, permeable basalt, and other fractured igneous and metamorphic rocks. Medium K's refer to formations with some permeability such as clays, glacial tills, shales and unfractured metamorphic and igneous rocks. General K values would be:

High K - $\geq 1 \times 10^3$ gal/day/ ft^2 ,

Medium K - Between 1×10^3 and 1×10^{-3} gal/day/ ft^2 , and

Low K - $\leq 1 \times 10^{-4}$ gal/day/ ft^2 .

Sole Source Aquifer - An aquifer which provides the only source of drinking water. No other ground or surface water supplies are available.

TABLE 2. *(a) Hazardous Waste and PCB Facility Site Preliminary Groundwater Quality Protection Evaluation Matrix
 Uppermost Aquifer *(c)

Aquifer Type	Uppermost Aquifer *(c)				
	Unconfined Aquifer			Confined Aquifer	
Beneficial uses within one mile downgradient	High Hydraulic conductivity and Productivity	Medium Hydraulic Conductivity and Productivity	Low Hydraulic Conductivity and Productivity	Aquitard	Aquiclude
Public/private Sole Source Aquifer *(b)	1	1	1	1	3
Present or potential public/private drinking water and/or livestock water supply and irrigation	1	1	2	2	3
Aquifer discharges to fresh or salt water wetlands or marshes.	1	2	3	2	3
Aquifers discharges to surface water body with established uses.	1	1	2	1	3
Industrial	1	2	3	3	3
Treatment required for drinking or industrial use.	2	2	3	3	3
Total dissolved solid level naturally greater than 10,000 mg/L; no identified uses. Does not meet drinking water standards	3	3	3	3	3

Protection Levels: 1. Proposed facility site does not meet groundwater protection criterion.
 2. Proposed facility site meets initial groundwater protection screening criterion but the site has limitations which must be addressed in detail in the Part B application.
 3. Proposed facility site meets initial groundwater protection screening criterion.

*(a) Table 1 defines terms of the matrix.

*(b) Unless otherwise noted groundwater meets drinking water standards without treatment.

*(c) Uppermost Aquifer and other Aquifers hydraulically interconnected.

PROPOSED

DIVISION 110

HAZARDOUS WASTE MANAGEMENT

Polychlorinated Biphenyls (PCB)

- 340-110-001 Purpose, Scope and Applicability.
- 340-110-003 Definitions.
- 340-110-020 Manufacturing, Processing, Distribution in Commerce and Use
of PCB and PCB Items.
- 340-110-040 Marking of PCB and PCB Items.
- 340-110-060 Treatment and Disposal.
- 340-110-065 Storage for Disposal.
- 340-110-070 Incineration.
- 340-110-075 Landfilling.
- 340-110-077 Permits.
- 340-110-080 Records and Monitoring.

Authority: ORS Chapter 468, including 468.020; ORS 466, including 466.020
and 466.505 to .530; and ORS 183.

Purpose, Scope and Applicability.

340-110-001 (1) The purpose of this Division is to establish requirements for the storage, treatment, disposal and marking prior to disposal of PCB and PCB items.

(2) These regulations are in addition to and do not preempt any local, state or federal statutes or regulations.

(3) This Division incorporates, by reference, PCB management regulations of the federal program, included in 40 CFR Part 761, into Oregon Administrative Rules. Persons must consult 40 CFR Part 761 in addition to this Division to determine all applicable PCB management requirements. Persons must also consult Division 120 of this chapter for additional siting and permitting requirements for PCB disposal.

Definitions.

340-110-003 (1) The definitions of the following sections are added to 40 CFR 761.3.

(2) The definitions of OAR 340-100-010.

(3) For the purpose of this Division:

"Agency's Regional Administrator in the EPA Region in which the PCBs are located" means the Department.

"Agency" means the Department.

"Approve" means permit.

"Approved" means permitted.

"Approval" means permit.

"Assistant Administrator for Pesticides and Toxic Substances" means the Department.

"Appropriate Regional Administrator" means the Department.

"Chemical Waste Landfill" means PCB landfill.

"Environmental Protection Agency" and "EPA" mean the Department.

"Initial Report" means application.

"Receive Written Approval" means obtain a permit.

"Regional Administrator" means the Department.

Manufacturing, Processing, Distribution in Commerce and Use of PCB and PCB Items.

340-110-020(1) The provisions of 40 CFR 761.20 through 761.39 are deleted.

(Comment: The requirements of these parts are administered by the U.S. Environmental Protection Agency and not the Oregon Department of Environmental Quality).

Marking of PCB and PCB Items.

340-110-040(1) The provisions of 40 CFR 761.40 through 761.59 are applicable only as they relate to items removed from service for disposal.

Treatment and Disposal.

340-110-060(1) Sections (2) through (4) of this rule are added to the provisions of 40 CFR 761.60(a).

(2) "PCB disposal facility" includes a facility for treatment or disposal of PCB or PCB items.

(3) No person shall treat or dispose of PCB or PCB items except at a PCB disposal facility permitted by the Department.

(4) No person shall establish, construct or operate a PCB disposal facility without a permit issued by the Department.

340-110-061 (1) The provisions of 40 CFR 761.60(d)(1) are replaced by Section (2) of this rule.

(2) Spills. Spills, leaks and other uncontrolled discharges of PCB constitute disposal of PCB and shall be reported and managed in accordance with Division 108.

(3) Section (4) of this rule is added to the provisions of 40 CFR 761.60(e).

(4) The permit shall be issued in accordance with Divisions 106 and 120 and may contain conditions and provisions as the Department deems appropriate.

(5) Section (6) of this rule is added to 40 CFR 761.60.

(6) Waste Oil. The use of waste oil that contains any detectable concentration of PCB as a sealant coating or dust control agent is prohibited. Prohibited uses include, but are not limited to, road oiling, general dust control, use as a pesticide carrier and use as a rust preventative on pipes.

Storage for Disposal.

340-110-065 (1) The provisions of 40 CFR 761.65(c)(7)(ii) are replaced by Section (2) of this rule.

(2) The owners or operators of any facility using containers described in 40 CFR 761.65(c)(7)(i) shall prepare and implement a Spill Prevention Control and Countermeasure (SPCC) plan as described in 40 CFR Part 112. In complying with 40 CFR Part 112, the owner or operator shall read "oil(s)" as "PCB(s)" whenever it appears.

Incineration.

340-110-070(1) The Commission shall not issue a permit for any facility designed to dispose of PCB by incineration unless: a) the facility is also equipped to incinerate hazardous waste; and b) the applicant has received all federal and state permits required to operate a hazardous waste incinerator.

(2) An incinerator that disposes of PCB or PCB items must incinerate more hazardous waste than PCB. Any permit issued by the Commission for the incineration of PCB or PCB items shall contain a condition requiring the incineration of at least this level of hazardous waste.

(3) An incinerator used for the incineration of PCB or PCB items shall be permitted by the Department pursuant to Divisions 106 and 120.

(Comment: The owner or operator of an incinerator may also have to obtain an Air Contaminant Discharge Permit from the Department and such permit may establish standards and requirements more stringent than those of 40 CFR 761.70 or this Division).

(4) Section (5) of this rule is added to the provisions of 40 CFR 761.70(d)(1).

(5) Information which shows that Subparts B, C, D, F, G and H of 40 CFR 264 will be met when applied to the incineration of PCB and PCB items.

(6) The provisions of 40 CFR 761.70(d)(8) are replaced by Section (7) of this rule.

(7) Transfer of Property. The permit is personal to the permittee and is nontransferable. A new owner or operator shall comply with 340-105-010(2)(d)(B)(iv) of this Chapter.

Landfilling.

340-110-075(1) Section (2) of this rule is added to the provisions of 40 CFR 761.75(c)(1).

(2) Information which shows that Subparts, B, C, D, F, G, H and N of 40 CFR 264 will be met when applied to PCB landfills.

(3) The provisions of 40 CFR 761.75(c)(7) are replaced by Section (4) of this rule.

(4) Transfer of property. The permit is personal to the permittee and is nontransferable. A new owner or operator shall comply with 340-105-010(2)(d)(B)(iv) of this chapter.

Permits.

340-110-077(1) The procedures and requirements of Divisions 105 and 120 shall be followed by an applicant for a PCB disposal facility permit.

(2) The procedures of Divisions 106 and 120 will be followed when issuing permits required by this Division.

Records and Monitoring.

340-110-080 (1) The provisions of 40 CFR 761.180(a)(3) are deleted.

(2) Data reported to the Department as required by 40 CFR 761.180 shall be in both pounds and kilograms.

(3) The provisions of 40 CFR 761.185 through 761.193 are deleted.

RULEMAKING STATEMENTS

for

Rules to establish new Siting and Permitting Requirements for Hazardous Waste and PCB Treatment and Disposal Facilities, and to Manage PCB.

STATEMENT OF NEED:

Pursuant to ORS 183.335(7), these statements provide information on the Environmental Quality Commission's intended action to adopt and amend rules.

(1) Legal Authority

Oregon Laws 1985, Chapter 670, Section 44 requires the Environmental Quality Commission to adopt rules to carry out the provisions of that Act. ORS 466.020 authorizes the Commission to adopt rules to govern the management of hazardous waste.

(2) Need for the Rule

Prior to the passage of Oregon Laws 1985, Chapter 670, the Department and Commission considered only the technical merits of a proposal to treat or dispose of hazardous waste or PCB. Through Chapter 670, the State Legislature ordered the Department and Commission to consider the broader implications of locating a facility to treat or dispose of hazardous waste or PCB. The proposed rules implement Chapter 670 by establishing standards that must be met when locating such a facility. Until rules are adopted, the Department cannot receive and process applications for new hazardous waste or PCB treatment or disposal facilities.

(3) Principal Documents Relied Upon

Oregon Laws 1985, Chapter 670
ORS 466.015 through 466.065
ORS 466.250 through 466.350
Resource Conservation and Recovery Act, Subtitle C, and 40 CFR 260 through 270.
Toxic Substances Control Act, Section 6, and 40 CFR 761
Article IV(5) of ORS 469.930 (The Northwest Interstate Compact on Low-Level Radioactive Waste Management)
The Federal Interstate Commerce Clause

FISCAL AND ECONOMIC IMPACT:

Presently, only two licensed hazardous waste or PCB treatment or disposal facilities exist in the state. The proposed rules directly affect only these two facilities and any proposed facilities in the future. Most of the rules pertain to proposed facilities only.

It is difficult to project the overall economic impact of the proposed rules. Because of a more detailed permitting procedure, the costs for a successful applicant would likely increase. However, the proposed rules contain a screening process as the first step in the permitting procedure. The screening process should exclude poor proposals or poor sites for hazardous waste or PCB treatment or disposal from further consideration. Thus a potentially unsuccessful applicant will not have the significant costs of preparing a technical application and the Department will not have the costs of reviewing it. The screening process will also exclude poor proposals or sites before local government incurs significant costs in its review process.

The small business impact of the proposed rules should not be significant. Because treatment and disposal facilities may have added costs, generators of hazardous waste or PCB who use these facilities may have these additional costs passed on to them. However, additional standards are proposed to protect the public health and safety and the environment. These standards address many of the concerns that the public has when these facilities are considered. Thus, the proposed rules should increase the opportunity to locate hazardous waste and PCB treatment or disposal facilities in the state. Additional facilities should benefit generators of hazardous waste and PCB.

The fiscal impact on the Department should not be significant. The legislature increased permit application processing fees to minimize the fiscal impact to the Department when it reviews proposals for facilities.

LAND USE CONSISTENCY:

The Department has concluded that the proposed rules conform with the Statewide Planning Goals and Guidelines.

Goal 6 (Air, Water and Land Resources Quality): The proposed rules are designed to minimize the impact of hazardous waste and PCB treatment and disposal facilities on the environment by assuring protection of air, water and land resources.

Goal 11 (Public Facilities and Services): The proposed rules would guide an orderly and efficient siting of hazardous waste and PCB treatment and disposal facilities to meet the public's needs.

This rule does not appear to conflict with other goals.

It is requested that local, state and federal agencies review the proposed action and comment on possible conflicts with their programs affecting land use and with the Statewide Planning Goals within their expertise and jurisdiction. Local government planning departments are especially requested to review the proposed rules.

The Department of Environmental Quality intends to ask the Department of Land Conservation and Development to mediate any appropriate conflicts brought to our attention by local, state or federal authorities.

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

**Proposed Rules to Establish Siting and Permitting Requirements
for Hazardous Waste and PCB Treatment and Disposal Facilities**

Date Prepared: February 12, 1986
Hearing Dates: March 17, 1986
March 18, 1986
March 19, 1986
March 20, 1986
Comments Due: March 28, 1986

**WHO IS
AFFECTED:**

Owners and operators of hazardous waste and PCB treatment and disposal facilities; Oregonians living near, or along transportation routes to, such facilities; businesses — including generators and transporters — handling hazardous waste or PCB.

BACKGROUND:

Chapter 670 - Oregon Laws 1985, passed during the 1985 session of the Oregon Legislature, directs the Environmental Quality Commission to set new siting and permitting requirements for hazardous waste and PCB treatment and disposal facilities. These requirements will be in addition to existing technical requirements already in Oregon Administrative Rules. The Commission, DEQ's governing board, must adopt rules to implement Chapter 670 by May 1986.

**WHAT IS
PROPOSED:**

The Department is proposing a three-step procedure to review each permit application for proposed hazardous waste and PCB treatment and disposal facilities, including landfills and incinerators. The procedure will include:

- An initial screen by DEQ to exclude a poor proposal or site.
- A review by local government and DEQ to assure compatibility with land use, health and safety and environmental criteria.
- A review by DEQ of the technical portion of the treatment or disposal facility application.

The Department is also proposing to adopt by reference the federal rules for management of PCB.

**WHAT ARE THE
HIGHLIGHTS:**

An applicant will be required to meet standards for these criteria during the initial screen: Need, Capacity, Technology and Design, Location, Property Line Setbacks, Groundwater Protection, and Owner and Operator Capability and Compliance History. Local government will be asked to address several additional criteria when considering the land use compatibility of a proposed facility. A Community Participation program will be an integral part of the procedure to review permit applications.

(over)



P.O. Box 1760
Portland, OR 97207

8/16/84

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.

**HOW TO
COMMENT:**

Public Hearings to receive oral and written comments are scheduled for:

Monday, March 17, 1986 9:00 a.m. DEQ Portland Headquarters Room 1400 522 S. W. Fifth Avenue Portland	Monday, March 17, 1986 7:00 p.m. Fair Board Extension Service Building Room 1 2610 Grove Street Baker
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Tuesday, March 18, 1986
7:00 p.m.
Arlington Elementary School Cafetorium
1400 Main Street
Arlington

Wednesday, March 19, 1986
7:00 p.m.
Medford City Council Chambers
City Hall, Second Floor
411 West Eighth Street
Medford

Thursday, March 20, 1986
7:00 p.m.
Cascade Natural Gas Community Room
334 N. E. Hawthorne
Bend

Written comments may be submitted at the public hearings or mailed, by 5:00 p.m., March 28, 1986, to:

DEQ
Hazardous and Solid Waste Division
Attention: Bob Danko
P. O. Box 1760
Portland, OR 97207

**WHAT IS THE
NEXT STEP:**

After the public hearings, DEQ will evaluate the comments, prepare a written response to comments and make a recommendation to the Environmental Quality Commission on April 25, 1986. For more information on the proposed rules, please contact Bob Danko at 229-5769 (Portland metropolitan area), or 1-800-452-4011 (toll-free within Oregon). To obtain a copy of the proposed rules, please contact the DEQ Public Affairs office at 229-5317 (Portland metropolitan area), or 1-800-452-4011 (toll-free within Oregon).

CHAPTER 670

AN ACT

SB 138

Relating to environment; creating new provisions; amending ORS 459.410, 459.445, 459.505, 459.590, 459.635, 459.640, 468.220 and 767.457; repealing ORS 459.530; appropriating money; and declaring an emergency.

Be It Enacted by the People of the State of Oregon:

SECTION 1. ORS 459.410 is amended to read:

459.410. As used in ORS 453.635 and 459.410 to 459.450 and 459.460 to 459.690, unless the context requires otherwise:

(1) "Commission" means the Environmental Quality Commission.

(2) "Department" means the Department of Environmental Quality.

(3) "Director" means the Director of the Department of Environmental Quality.

(4) "Dispose" or "disposal" means the discharge, deposit, injection, dumping, spilling, leaking or placing of any hazardous waste into or on any land or water so that the hazardous waste or any hazardous constituent thereof may enter the environment or be emitted into the air or discharged into any waters of the state as defined in ORS 468.700.

(5) "Generator" means the person, who by virtue of ownership, management or control, is responsible for causing or allowing to be caused the creation of a hazardous waste.

(6) "Hazardous waste" does not include radioactive material or the radioactively contaminated containers and receptacles used in the transportation, storage, use or application of radioactive waste, unless the material, container or receptacle is classified as hazardous waste under paragraph (a), (b) or (c) of this subsection on some basis other than the radioactivity of the material, container or receptacle. Hazardous waste does include all of the following which are not declassified by the commission under ORS 459.430 (3):

(a) Discarded, useless or unwanted materials or residues resulting from any substance or combination of substances intended for the purpose of defoliating plants or for the preventing, destroying, repelling or mitigating of insects, fungi, weeds, rodents or predatory animals, including but not limited to defoliants, desiccants, fungicides, herbicides, insecticides, nematocides and rodenticides.

(b) Residues resulting from any process of industry, manufacturing, trade or business or government or from the development or recovery of any natural resources, if such residues are classified as hazardous by order of the commission, after notice and public hearing. For purposes of classification, the commission must find that the

residue, because of its quantity, concentration, or physical, chemical or infectious characteristics may:

(A) Cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

(B) Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

(c) Discarded, useless or unwanted containers and receptacles used in the transportation, storage, use or application of the substances described in paragraphs (a) and (b) of this subsection.

(7) "Hazardous waste collection site" means the geographical site upon which hazardous waste is stored.

(8) "Hazardous waste disposal site" means a geographical site in which or upon which hazardous waste is disposed.

(9) "Hazardous waste treatment site" means the geographical site upon which or a facility in which hazardous waste is treated.

(10) "Manifest" means the form used for identifying the quantity, composition, and the origin, routing and destination of hazardous waste during its transportation from the point of generation to the point of disposal, treatment or storage.

(11) "PCB" has the meaning given that term in ORS 468.900.

[(11)] (12) "Person" means the United States, the state or a public or private corporation, local government unit, public agency, individual, partnership, association, firm, trust, estate or any other legal entity.

[(12)] (13) "Store" or "storage" means the containment of hazardous waste either on a temporary basis or for a period of years, in a manner that does not constitute disposal of the hazardous waste.

[(13)] (14) "Transporter" means any person engaged in the transportation of hazardous waste by any means.

[(14)] (15) "Treat" or "treatment" means any method, technique, activity or process, including but not limited to neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize the waste or so as to render the waste nonhazardous, safer for transport, amenable for recovery, amenable for storage, or reduced in volume.

SECTION 2. Sections 3 to 33 and 43 of this Act are added to and made a part of ORS 459.410 to 459.450.

SECTION 3. (1) The Legislative Assembly finds it is in the interest of public health and safety and environment to protect Oregon citizens from the potential harmful effects of the transportation and treatment or disposal of hazardous waste and PCB within Oregon.

(2) Therefore, the Legislative Assembly declares that it is the purpose of ORS 459.410 to 459.450 and 459.460 to 459.690 to:

(a) Protect the public health and safety and environment of Oregon to the maximum extent possible;

(b) Exercise the maximum amount of control over actions within Oregon relating to hazardous waste and PCB transportation and treatment or disposal;

(c) Limit to the extent possible the treatment or disposal of hazardous waste and PCB in Oregon to materials originating in the states that are parties to the Northwest Interstate Compact on Low-Level Radioactive Waste Management under ORS 469.930; and

(d) Limit to the extent possible the size of any hazardous waste or PCB treatment or disposal facility in Oregon to a size that is appropriate to treat or dispose of waste or PCB originating in Oregon and, if capacity permits, to waste or PCB originating in those states that are parties to the Northwest Interstate Compact on Low-Level Radioactive Waste Management under ORS 469.930.

SECTION 4. In order to carry out the provisions of ORS 459.410 to 459.450 and 459.460 to 459.695, the commission shall:

(1) Limit the number of facilities disposing of or treating hazardous waste or PCB;

(2) Establish classes of hazardous waste or PCB that may be disposed of or treated;

(3) Designate the location of a facility designed to dispose of or treat hazardous waste or PCB; and

(4) Limit to the extent otherwise allowed by law, the hazardous waste or PCB accepted for treatment or disposal at a facility first to hazardous waste or PCB originating in Oregon, or if the capacity of the facility as established under section 5 of this 1985 Act allows, or it is necessary for the commission to receive and maintain state authorization of a hazardous waste regulatory program under P.L. 94-580 and P.L. 98-616, to states that are parties to the Northwest Interstate Compact on Low-Level Radioactive Waste Management as set forth in ORS 469.930.

SECTION 5. Before issuing a license for a new facility designed to dispose of or treat hazardous waste or PCB, the commission must find, on the basis of information submitted by the applicant, the department or any other interested party, that the proposed facility meets the following criteria:

(1) The proposed facility location:

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

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

(c) Is situated sufficient distance from urban growth boundaries, as defined in ORS 197.295, to protect the public health and safety, accessible by transportation routes that minimize the threat to the public health and

safety and to the environment and sufficient distance from parks, wilderness and recreation areas to prevent adverse impacts on the public use and enjoyment of those areas.

(2) Subject to any applicable standards adopted under section 9 of this 1985 Act, the design of the proposed facility:

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

(b) Significantly adds to:

(A) The range of hazardous waste or PCB handled at an already licensed treatment or disposal facility; or

(B) The type of technology employed at already licensed treatment or disposal facilities.

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

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

(a) Lack of adequate current treatment or disposal capacity to handle hazardous waste or PCB generated by Oregon companies;

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

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

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

(a) Public health and safety; or

(b) Environment of adjacent lands.

SECTION 6. As a condition to the issuance of a renewal license under ORS 459.410 to 459.450 and 459.460 to 459.690, the commission may require the applicant to comply with all or some of the criteria set forth in section 5 of this 1985 Act.

SECTION 7. Before issuing a license for a facility designed to treat or dispose of hazardous waste or PCB, the license applicant must demonstrate, and the commission must find, that the owner and operator meet the following criteria:

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

(2) The compliance history of the owner including any parent company of the owner and the operator in owning and operating other similar facilities, if any, indicates an ability and willingness to operate the proposed facility in compliance with the provisions of ORS 459.410 to 459.450 and 459.460 to 459.690 or any condition imposed on the licensee by the commission.

SECTION 8. The Environmental Quality Commission may, by rule, designate classes of facilities designed

to treat or dispose of hazardous waste or PCB that shall be subject to the provisions of sections 4 to 27 of this 1985 Act.

SECTION 9. The commission may impose specific standards for the range and type of hazardous waste or PCB treated or disposed of at a facility in order to protect the public health and safety and environment of Oregon.

SECTION 10. Whenever the Environmental Quality Commission finds there is a need for an additional hazardous waste or PCB treatment or disposal facility according to the criteria established in section 5 of this 1985 Act, the commission shall establish an application period during which persons may apply for a PCB disposal facility license according to the provisions of sections 15 to 20 of this 1985 Act or a hazardous waste disposal facility license under ORS 459.410 to 459.450 and 459.460 to 459.690.

SECTION 11. (1) Upon request, the department shall furnish an application form to any person interested in developing or constructing a hazardous waste or PCB treatment or disposal facility. Each such form shall contain:

- (a) The name and address of the applicant.
- (b) A statement of financial condition of the applicant, including assets, liabilities and net worth.
- (c) The experience of the applicant in construction, management, supervision or development of hazardous waste or PCB treatment or disposal facilities and in the handling of such substances.

(2) The department shall also require the submission of such information relating to the construction, development or establishment of a proposed hazardous waste or PCB treatment or disposal site and facilities to be operated in conjunction therewith, and such additional information, data and reports as it deems necessary to make a decision on granting or denying a license.

(3) If the application is for a new license to operate a new hazardous waste or PCB treatment or disposal facility, the application shall be accompanied by a fee in an amount sufficient to cover the department's costs in investigating and processing the application, but which shall not exceed \$70,000, which shall be continuously appropriated to the department for payment of the department's administrative expenses incurred in the process of licensing the treatment or disposal facility. Any portion of the fee that exceeds the department's administrative expenses shall be refunded to the applicant.

(4) If the application is for the renewal of an existing license, the application shall be accompanied by a fee in an amount estimated by the department to be sufficient to cover the department's costs in investigating and processing the renewal application. If the department incurs expenses in excess of the estimated fee, the applicant shall pay the excess fees. Under no circumstances shall the renewal fee exceed a total of \$50,000. Any

portion of the fee that exceeds the department's administrative expenses shall be refunded to the applicant. Such fees shall be continuously appropriated to the department for payment of the department's administrative expenses incurred in the process of renewing the license for a treatment or disposal facility.

SECTION 12. (1) To aid and advise the director and the commission in the selection of a hazardous waste or PCB treatment or disposal facility or the site of such facility, the director shall establish citizen advisory committees as the director considers necessary. The director shall determine the representation, membership, terms and organization of the committees and shall appoint their members. The director or a designee shall be a nonvoting member of each committee.

(2) The advisory committees appointed under subsection (1) of this section shall review applications during an application period established under section 10 of this 1985 Act and make recommendations on the applications to the commission.

SECTION 13. As used in sections 13 to 33 of this 1985 Act, "PCB disposal facility" includes a facility for the treatment or disposal of PCB.

SECTION 14. (1) No person shall treat or dispose of any PCB anywhere in this state except at a PCB disposal facility licensed pursuant to sections 4 to 33 of this 1985 Act.

(2) No person shall establish, construct or operate a PCB disposal facility without a license therefor issued under sections 4 to 33 of this 1985 Act.

SECTION 15. The department shall:

(1) Provide for the administration, enforcement and implementation of sections 4 to 33 of this 1985 Act and may perform all functions necessary:

- (a) To regulate the operation and construction of a PCB disposal facility; and
- (b) For the licensing of a PCB disposal facility in consultation with the appropriate county governing body or city council.

(2) Coordinate and supervise all functions of state and local governmental agencies engaged in activities subject to the provisions of sections 4 to 33 of this 1985 Act.

SECTION 16. In accordance with applicable provisions of ORS 183.310 to 183.550, the commission shall:

(1) Adopt rules and issue orders, including but not limited to establishing minimum requirements for the disposal of PCB, minimum requirements for operation, maintenance, monitoring, reporting and supervision of disposal facilities, and requirements and procedures for selection of such facilities.

(2) Adopt rules and issue orders relating to the procedures of the department with respect to hearings,

filing of reports, submission of plans and the issuance, revocation and modification of licenses issued under ORS 468.900 to 468.921.

SECTION 17. (1) In adopting rules under section 16 of this 1985 Act regulating the disposal of PCB including, but not limited to, rules for the operation and maintenance of a PCB disposal facility, the commission shall provide for the best practicable disposal of the PCB in a manner that will minimize the possibility of adverse effects on the public health and safety or environment.

(2) The department shall investigate and analyze in detail the disposal methods and procedures required to be adopted by rule under section 16 of this 1985 Act and subsection (1) of this section and shall report its findings and recommendations to the commission.

SECTION 18. License applications submitted to the department for managing, operating, constructing, developing or establishing a PCB disposal facility must contain the following:

(1) The management program for the operation of the facility including the person to be responsible for the operation of the facility and a resume of the person's qualifications, the proposed method of disposal, the proposed method of pretreatment or decontamination of the facility, if any, and the proposed emergency measures to be provided at the facility.

(2) A description of the size and type of facility to be constructed, including the height and type of fencing to be used, the size and construction of structures or buildings, warning signs, notices and alarms to be used, the type of drainage and waste treatment facilities and maximum capacity of such facilities, the location and source of each water supply to be used and the location and the type of fire control facilities to be provided at the facility.

(3) A preliminary engineering sketch and flow chart showing proposed plans and specifications for the construction and development of the disposal facility and the waste treatment and water supply facilities, if any, to be used at the facility.

(4) The exact location and place where the applicant proposes to operate and maintain the PCB disposal facility, including the legal description of the lands included within the facility.

(5) A geologist's survey report indicating land formation, location of water resources and direction of the flows thereof and the geologist's opinion relating to the potential of contamination of water resources including but not limited to possible sources of such contamination.

(6) The names and addresses of the applicant's current or proposed insurance carriers, including copies of insurance policies then in effect.

SECTION 19. Upon receipt of an application for a PCB disposal facility license, the department shall cause copies of the application to be sent to affected state agencies, including the Health Division, the Public Util-

ity Commissioner, the State Fish and Wildlife Commission and the Water Resources Director. Each agency shall respond within the period specified by the department by making a written recommendation as to whether the license application should be granted. Recommendation from other agencies shall be considered in determining whether to grant the license.

SECTION 20. (1) Prior to holding hearings on a PCB disposal facility license application, the commission shall cause notice to be given in the county or counties where the proposed facility is to be located in a manner reasonably calculated to notify interested and affected persons of the license application.

(2) The notice shall contain information regarding the approximate location of the facility and the type and amount of PCB intended for disposal at the facility, and shall fix a time and place for a public hearing. In addition, the notice shall contain a statement that any person interested in or affected by the proposed PCB disposal facility shall have opportunity to testify at the hearing.

SECTION 21. The commission shall conduct a public hearing in the county or counties where a proposed PCB disposal facility is located and may conduct hearings at other places as the department considers suitable. At the hearing the applicant may present the application and the public may appear or be represented in support of or in opposition to the application.

SECTION 22. (1) At the close of the application period under section 10 of this 1985 Act, the department shall examine and review all PCB disposal facility license applications submitted to the commission and make such investigations as the department considers necessary, and make a recommendation to the commission as to whether to issue the license.

(2) After reviewing the department's recommendations under subsection (1) of this section, the commission shall decide whether or not to issue the license. It shall cause notice of its decision to be given to the applicant by certified mail at the address designated in the application. The decision of the commission is subject to judicial review under ORS 183.480.

SECTION 23. The Environmental Quality Commission may not issue a license under section 22 of this 1985 Act for any facility designed to dispose of PCB by incineration unless:

(1) The facility is also equipped to incinerate hazardous waste; and

(2) The applicant has received all federal and state licenses required to operate a hazardous waste incinerator.

SECTION 24. (1) The department shall investigate any complaint made to it by any person that the operation of any PCB disposal facility is unsafe or that the opera-

tion is in violation of a condition of the operator's license or any provisions of sections 4 to 31 of this 1985 Act or the rules adopted under sections 4 to 33 of this 1985 Act. Upon receiving a complaint, the department shall furnish a copy of the complaint to the person holding the license to operate the PCB disposal facility.

(2) If, after making an investigation under subsection (1) of this section, the department is satisfied that sufficient grounds exist to justify a hearing upon the complaint, it shall give 10 days' written notice of the time and place of the hearing and the matters to be considered at the hearing. Both the complainant and the respondent are entitled to be heard, produce evidence and offer exhibits and to require the attendance of witnesses at the hearing.

(3) The commission or a hearings examiner appointed by the commission shall hear the matter. Within 30 days after the date of the hearing and after considering all evidence and testimony submitted, the commission shall make a specific order as it considers necessary. Any order issued by the commission under this subsection shall be subject to judicial review in the manner provided by ORS 183.480 for judicial review of orders in contested cases. The costs of reporting and of transcribing the hearing for the purpose of judicial review shall be paid by the party seeking judicial review.

SECTION 25. The department shall establish and operate a monitoring, inspection and surveillance program over all PCB disposal facilities or may contract with any qualified public or private agency other than the owner or licensee to do so. Owners and operators of a PCB disposal facility must allow necessary access to the PCB disposal facility and to its records, including those required by other public agencies, for the monitoring, inspection and surveillance program to operate.

SECTION 26. (1) Whenever, in the judgment of the department, there is reasonable cause to believe that a clear and immediate danger to the public health or safety or to the environment exists from the continued operation of the facility, without hearing or prior notice, the department shall order the operation of the facility halted by service of the order on the facility operator or an agent of the operator.

(2) Within 24 hours after the order is served, the department must appear in the appropriate circuit court to petition for the equitable relief required to protect the public health or safety or the environment and may begin proceedings to revoke the license if grounds for revocation exist.

SECTION 27. (1) As a condition of issuance of a PCB disposal facility license, if PCB waste disposal is to be by landfilling, the licensee must deed to the state the real property in or upon which the PCB waste will be permanently landfilled. If the state is required to pay the licensee just compensation for the real property deeded to it, the licensee shall pay the state annually a fee in an

amount determined by the department to be sufficient to make the real property self-supporting and self-liquidating.

(2) In addition to the requirement under subsection (1) of this section, each PCB disposal facility licensee under sections 4 to 33 of this 1985 Act shall be required to do the following as a condition to holding the license:

(a) Proceed expeditiously with and complete the project in accordance with the plans and specifications approved and the rules adopted under sections 4 to 33 of this 1985 Act.

(b) Commence operation, management or supervision of the PCB disposal facility on completion of the project and not to permanently discontinue the operation, management or supervision of the facility without the approval of the department.

(c) Maintain sufficient liability insurance or equivalent financial assurance in such amounts as determined by the department to be reasonably necessary to compensate for damage to the public health and safety and environment.

(d) Establish emergency procedures and safeguards necessary to prevent accidents and reasonably foreseeable risks.

(e) Restore, to the extent reasonably practicable, the area of the facility to its original condition when use of the area is terminated as a facility.

(f) Maintain a cash bond or other equivalent financial assurance in the name of the state and in an amount estimated by the department to be sufficient to cover any costs of closing the facility and monitoring it or providing for its security after closure, to secure performance of license requirements and to provide for any remedial action by the state necessary to protect the public health and safety and the environment following facility closure. The financial assurance shall remain on deposit for the duration of the license and until the end of the post-closure period, except as the assurance may be released or modified by the department.

(g) Report periodically to the department on the volume and types of PCB received at the facility, their manner of disposition and the fees collected therefor.

(h) Maintain other plans and exhibits pertaining to the facility and its operation as determined by the department to be reasonably necessary to protect the public health or safety or the environment.

(i) Grant the commission the first opportunity to purchase the PCB disposal facility if the licensee offers the facility for sale.

(j) Maintain records of any PCB identified under provisions of sections 4 to 33 of this 1985 Act which is stored, treated or disposed of at the facility and the manner in which the PCB was stored, treated, transported or disposed of. The records shall be retained for the period of time determined by the commission.

(k) Assure that all personnel who are employed by the licensee are trained in proper procedures for handling,

transfer, transport, treatment, disposal and storage of PCB including but not limited to familiarization with all contingency plans.

(L) If disposal is by incineration, the facility must also incinerate a reasonable ratio of hazardous waste.

SECTION 28. An annual fee may be required of every PCB disposal facility licensee under sections 4 to 33 of this 1985 Act. The fee shall be in an amount determined by the commission to be adequate to carry on the monitoring, inspection and surveillance program established under section 25 of this 1985 Act and to cover related administrative costs. All such fees are continuously appropriated to the department to pay the cost of the program under section 25 of this 1985 Act.

SECTION 29. The commission may acquire real property for the disposal of PCB by instituting condemnation proceedings therefor to be conducted in accordance with ORS chapter 35.

SECTION 30. (1) If the commission revokes a PCB disposal facility license under ORS 459.620, the commission may:

(a) Close the existing PCB disposal site or facility; or
(b) Direct the department to acquire an existing facility or site for the disposal or treatment of PCB according to the provisions of subsection (2) of this section.

(2) The department may, upon direction from the commission and after payment of just compensation, acquire and own an existing facility for use in the disposal of PCB. In order to secure such a facility, the commission may modify or waive any of the requirements of this chapter, but not ORS 469.375 or 469.525, if the commission finds that waiver or modification:

(a) Is necessary to make operation of the facility economically feasible; and
(b) Will not endanger the public health and safety or the environment.

SECTION 31. (1) The department may limit, prohibit or otherwise restrict the treatment or disposal of PCB at a disposal facility if appropriate to protect public health and safety or the environment.

(2) The department shall monitor the origin and volume of PCB received at a disposal facility acquired and regulated under section 30 of this 1985 Act, and may curtail or reduce the volume of the PCB that may be accepted for disposal as necessary to:

(a) Protect public health and safety or the environment; or

(b) Assure that the operation of the facility is economically feasible.

(3) The department shall not accept any PCB at a disposal facility owned by the state from a state that is not a party to the Northwest Interstate Compact on Low-

Level Radioactive Waste Management as set forth in ORS 469.930.

SECTION 32. (1) The PCB disposal facility license shall require a fee based either on the volume of PCB accepted at the facility or a percentage of the fee collected, or both. The fees shall be calculated in amounts estimated to produce over the facility use period a sum sufficient to:

(a) Secure performance of license requirements;
(b) Close the facility;
(c) Provide for any monitoring or security of the facility after closure; and

(d) Provide for any remedial action by the state necessary after closure to protect the public health and safety and the environment.

(2) The amount so paid shall be held in a separate account and when the amount paid in by the licensee together with the earnings thereon equals the amount of the financial assurance required under subsection (2) of section 27 of this 1985 Act, the licensee shall be allowed to withdraw the financial assurance.

(3) If the facility is closed before the fees reach an amount equal to the financial assurance, appropriate adjustment shall be made and the reduced portion of the financial assurance may be withdrawn.

SECTION 33. (1) At the time a PCB disposal facility is closed, the person licensed under sections 4 to 33 of this 1985 Act to operate the facility must obtain a post-closure license from the department.

(2) A post-closure license issued under this section must be maintained until the end of the post-closure period established by the commission by rule.

(3) In order to obtain a post-closure license the licensee must provide post-closure care which shall include at least the following:

(a) Monitoring and security of the PCB disposal facility; and

(b) Any remedial action necessary to protect the public health and safety and environment.

(4) The commission may by rule establish a post-closure license application fee.

SECTION 34. Section 35 of this Act is added to and made a part of ORS chapter 767.

SECTION 35. (1) In addition to any other enforcement measure allowed, if a person violates the provisions of ORS 459.450 or 767.457 or rules adopted by the commissioner under ORS 459.450 or 767.457, the commissioner may impound the person's vehicle transporting, about to transport or that has transported hazardous waste, PCB or hazardous substance within the state. The commissioner may charge a reasonable fee for the costs of impoundment and storage, if any, before releasing any vehicle to its owner.

(2) As used in this section and ORS 767.457:

(a) "Hazardous substance" includes any substance defined by the commissioner as hazardous.

(b) "Hazardous waste" has the meaning given that term in ORS 459.410.

(c) "PCB" has the meaning given that term in ORS 468.900 when the PCB is a waste product of an industrial, commercial or other activity.

SECTION 36. ORS 767.457 is amended to read:

767.457. (1) The commissioner shall adopt rules setting standards for the safe transportation of hazardous waste, [as defined in ORS 459.410,] **hazardous substance and PCB** by all transporters.

(2) The authority granted under this section:

(a) Is in addition to any other authority granted the commissioner.

(b) Does not supersede the authority of the Energy Facility Siting Council to regulate the transportation of radioactive materials under ORS 469.530.

(3) In addition to any other penalty for violation of a rule adopted under this section, the commissioner, after hearing, may impose a civil penalty of not more than \$10,000 for violation of a rule adopted under this section. Each day of noncompliance with a rule is a separate violation.

SECTION 37. ORS 459.445 is amended to read:

459.445. (1) The commission may, by rule, require generators of hazardous waste to:

(a) Identify themselves to the department, list the location and general characteristics of their activity and name the hazardous waste generated;

(b) Keep records that accurately identify the quantities of such hazardous waste, the constituents thereof, and the disposition of such waste;

(c) Furnish information on the chemical composition of such hazardous waste to persons transporting, treating, storing or disposing of such waste;

(d) Use a department approved manifest system to assure that all such hazardous waste generated are destined for treatment, storage or disposal in treatment, storage or disposal facilities (other than facilities on the premises where the waste is generated) which are operating pursuant to lawful authority; and

(e) Submit reports to the department setting out quantities of hazardous waste generated during a given time period and the disposition of all such waste.

(2) The generator of a hazardous waste shall be allowed to store a hazardous waste produced by that generator on the premises of that generator for a term not to exceed that set by rule without obtaining a hazardous waste collection site license. This shall not relieve any generator from complying with any other rule or standard regarding storage of hazardous waste.

(3) The commission by rule may exempt certain classes or types of hazardous waste generators from part or all of the requirements upon generators adopted by the

commission. Such an exemption can only be made if the commission finds that, because of the quantity, concentration, methods of handling or use of a hazardous waste, such a class or type of generator is not likely either:

(a) To cause or significantly contribute to an increase in serious irreversible or incapacitating reversible illness; or

(b) To pose a substantial present or potential threat to human health or the environment.

(4) **The commission by rule may provide for a special license for the treatment of hazardous waste on the premises of a generator. Such a special license may be established only if such treatment has no major adverse impact on:**

(a) **Public health and safety; or**

(b) **The environment of adjacent lands.**

SECTION 38. ORS 459.505 is amended to read:

459.505. (1) Except as provided in ORS 459.445 (2), no person shall:

(a) Store a hazardous waste anywhere in this state except at a licensed hazardous waste treatment, collection or disposal site;

(b) Establish, construct or operate a hazardous waste collection site in this state without obtaining a hazardous waste collection site license issued pursuant to this chapter; or

(c) Establish, construct or operate a hazardous waste treatment site in this state without obtaining a hazardous waste treatment site license issued under ORS 459.410 to 459.450 and 459.460 to 459.690.

(2) The commission may exempt certain classes of hazardous waste collection or treatment sites from part or all of the licensing requirements for these sites. Such an exemption can only be made if the commission finds that, because of the quantity, concentration or type of waste or duration of storage, such a class of collection or treatment site is not likely to endanger the public health, welfare or safety or the environment.

(3) If the director finds an emergency condition to exist, the director may authorize the short-term storage or treatment of a hazardous waste anywhere in the state as long as such temporary storage or treatment shall not constitute a hazard to public health, welfare or safety or to the environment.

(4) Hazardous waste collection sites operating on June 30, 1977, shall be required to obtain a hazardous waste collection site license not later than January 1, 1978.

(5) Hazardous waste treatment sites operating on October 3, 1979, shall be required to obtain a hazardous waste treatment site license not later than July 1, 1980.

SECTION 39. ORS 459.590 is amended to read:

459.590. (1) As a condition of issuance of a hazardous waste disposal site license, the licensee must deed to the state all that portion of the hazardous waste disposal site

in or upon which hazardous wastes shall be disposed of. If the state is required to pay the licensee just compensation for the real property deeded to it, the licensee shall pay the state annually a fee in an amount determined by the department to be sufficient to make such real property self-supporting and self-liquidating.

(2) Each hazardous waste disposal site licensee under ORS 459.410 to 459.450 and 459.460 to 459.690 shall be required to do the following as a condition to holding the license:

(a) Proceed expeditiously with and complete the project in accordance with the plans and specifications approved therefor pursuant to ORS 459.410 to 459.450 and 459.460 to 459.690 and the rules adopted thereunder.

(b) Commence operation, management or supervision of the hazardous waste disposal site on completion of the project and not to permanently discontinue such operation, management or supervision of the site without the approval of the department.

(c) Maintain sufficient liability insurance or equivalent financial assurance in such amounts as determined by the department to be reasonably necessary to protect the environment, and the health, safety and welfare of the people of this state.

(d) Establish emergency procedures and safeguards necessary to prevent accidents and reasonably foreseeable risks.

(e) Restore, to the extent reasonably practicable, the site to its original condition when use of the area is terminated as a site.

(f) Maintain a cash bond or other equivalent financial assurance in the name of the state and in an amount estimated by the department to be sufficient to cover any costs of closing the site and monitoring it or providing for its security after closure, to secure performance of license requirements and to provide for any remedial action by the state necessary to protect the public health, welfare and safety and the environment following site closure. The financial assurance shall remain on deposit for the duration of the license and until the end of the post-closure period, except as the assurance may be released or modified by the department.

(g) Report periodically on the volume of material received at the site and the fees collected therefor.

(h) Maintain other plans and exhibits pertaining to the site and its operation as determined by the department to be reasonably necessary to protect the public health, welfare or safety or the environment.

(i) In addition to the requirement of subsection (l) of this section, grant to the Environmental Quality Commission the first opportunity to purchase the hazardous waste disposal facility or site if the licensee offers the site for sale.

SECTION 40. ORS 459.635 is amended to read:

459.635. [The legislature finds that there is an urgent need for an Oregon site for the disposal of hazardous

chemical wastes and that such a site should be regulated but not operated by the Department of Environmental Quality.] (1) If the commission revokes a license under ORS 459.620, the commission may:

(a) Close an existing hazardous waste disposal site or facility; or

(b) Direct the department to acquire an existing facility or site for the disposal or treatment of hazardous waste according to the provisions of subsection (2) of this section.

(2) The department may, upon direction of the commission and upon payment of just compensation, acquire and own an existing facility or site for use in the disposal or treatment of hazardous waste. In order to secure such a site, the commission may modify or waive any of the requirements of this chapter, but not ORS 469.375 or 469.525, if it finds that such waiver or modification:

[(1)] (a) Is necessary to make operation of the facility or site economically feasible; and

[(2)] (b) Will not endanger the public health and safety or the environment.

SECTION 41. ORS 459.640 is amended to read:

459.640. (1) The department may limit, prohibit or otherwise restrict the treatment or disposal of certain hazardous [wastes] waste at a hazardous waste treatment or disposal site [owned by the state] if [necessary] appropriate to protect public health, welfare or safety or the environment or to prolong the useful life of the hazardous waste disposal site.

(2) The department shall monitor the origin and volume of hazardous waste received at a hazardous waste treatment or disposal site and may curtail or reduce the volume of the wastes that may be accepted for disposal as necessary to prolong the useful life of the site.

SECTION 42. ORS 468.220 is amended to read:

468.220. (1) The department shall be the agency for the State of Oregon for the administration of the Pollution Control Fund. The department is hereby authorized to use the Pollution Control Fund for one or more of the following purposes:

(a) To grant funds not to exceed 30 percent of total project costs for eligible projects as defined in ORS 454.505 or sewerage systems as defined in ORS 468.700.

(b) To acquire, by purchase, or otherwise, general obligation bonds or other obligations of any municipal corporation, city, county, or agency of the State of Oregon, or combinations thereof, issued or made for the purpose of paragraph (a) of this subsection in an amount not to exceed 100 percent of the total project costs for eligible projects.

(c) To acquire, by purchase, or otherwise, other obligations of any city that are authorized by its charter in an amount not to exceed 100 percent of the total project costs for eligible projects.

(d) To grant funds not to exceed 30 percent of the total project costs for facilities for the disposal of solid waste, including without being limited to, transfer and resource recovery facilities.

(e) To make loans or grants to any municipal corporation, city, county, or agency of the State of Oregon, or combinations thereof, for planning of eligible projects as defined in ORS 454.505, sewerage systems as defined by ORS 468.700 or facilities for the disposal of solid waste, including without being limited to, transfer and resource recovery facilities. Grants made under this paragraph shall be considered a part of any grant authorized by paragraph (a) or (d) of this subsection if the project is approved.

(f) To acquire, by purchase, or otherwise, general obligation bonds or other obligations of any municipal corporation, city, county, or agency of the State of Oregon, or combinations thereof, issued or made for the purpose of paragraph (d) of this subsection in an amount not to exceed 100 percent of the total project costs.

(g) To advance funds by contract, loan or otherwise, to any municipal corporation, city, county or agency of the State of Oregon, or combination thereof, for the purpose of paragraphs (a) and (d) of this subsection in an amount not to exceed 100 percent of the total project costs.

(h) To pay compensation required by law to be paid by the state for the acquisition of real property for the disposal by storage of environmentally hazardous wastes.

(i) To dispose of environmentally hazardous wastes by the Department of Environmental Quality whenever the department finds that an emergency exists requiring such disposal.

(j) To acquire for the state real property and facilities for the disposal by landfill, storage or otherwise of solid waste, including but not limited to, transfer and resource recovery facilities.

(k) To acquire for the state real property and facilities for the disposal by incineration or otherwise of hazardous waste or PCB.

(2) The facilities referred to in paragraphs (a) to (c) of subsection (1) of this section shall be only such as conservatively appear to the department to be not less than 70 percent self-supporting and self-liquidating from revenues, gifts, grants from the Federal Government, user charges, assessments and other fees.

(3) The facilities referred to in paragraphs (d), (f) and (g) of subsection (1) of this section shall be only such as conservatively appear to the department to be not less than 70 percent self-supporting and self-liquidating from revenues, gifts, grants from the Federal Government, user charges, assessments and other fees.

(4) The real property and facilities referred to in [paragraph (j)] paragraphs (j) and (k) of subsection (1) of this section shall be only such as conservatively appear to the department to be not less than 70 percent self-supporting and self-liquidating from revenues, gifts,

grants from the Federal Government, user charges, assessments and other fees.

(5) The department may sell or pledge any bonds, notes or other obligations acquired under paragraph (b) of subsection (1) of this section.

(6) Before making a loan or grant to or acquiring general obligation bonds or other obligations of a municipal corporation, city, county or agency for facilities for the disposal of solid waste or planning for such facilities, the department shall require the applicant to demonstrate that it has adopted a solid waste management plan that has been approved by the department. The plan must include a waste reduction program.

(7) Any grant authorized by this section shall be made only with the prior approval of the Joint Committee on Ways and Means during the legislative sessions or the Emergency Board during the interim period between sessions.

(8) The department may assess those entities to whom grants and loans are made under this section to recover expenses incurred in administering this section.

SECTION 43. No new PCB disposal facility shall be constructed on or after January 1, 1985, without first complying with sections 4 to 33 of this 1985 Act.

SECTION 44. Within 270 days after the effective date of this Act, the Environmental Quality Commission shall adopt rules according to the applicable provisions of ORS 183.310 to 183.550 to carry out the provisions of sections 4 to 33 of this Act.

SECTION 45. (1) The Environmental Quality Commission shall establish an application period under section 10 of this Act and first begin to receive applications for operation of a PCB disposal facility not later than 270 days after the commission first adopts rules under section 16 of this Act.

(2) This section is repealed July 1, 1987.

SECTION 46. Except as provided in section 48 of this Act, the provisions of this Act control application for licenses made to the Environmental Quality Commission under ORS 459.410 to 459.450 and 459.460 to 459.695 after January 31, 1984, but not yet approved on the effective date of this Act.

SECTION 47. Notwithstanding section 46 of this Act, an individual licensed under ORS 459.410 to 459.450 and 459.460 to 459.690 as of the day immediately preceding the effective date of this Act, who is subject to ORS 459.410 to 459.450 and 459.460 to 459.690 on and after the effective date of this Act, need not obtain a license under ORS 459.410 to 459.450 and 459.460 to 459.690 as amended by this Act until the license issued to the individual before the effective date of this Act under ORS 459.410 to 459.450 and 459.460 to 459.690 has expired. The individual is considered to be licensed under and

subject to ORS 459.410 to 459.450 and 459.460 to 459.690 on and after the effective date of this Act, according to the nature and character of the business conducted by the individual, until the expiration of the license. Any person operating under a license issued under ORS 459.410 to 459.450 and 459.460 to 459.690 whose license expires after the effective date of this Act but before the commission adopts rules under section 44 of this Act may continue to operate according to the terms of the expired license until such time as the commission has adopted rules to carry out the provisions of this Act and either issues or denies a renewal license according to the provisions of ORS 459.410 to 459.450 and 459.460 to 459.690 as amended by this Act.

SECTION 48. Notwithstanding any other provision of this Act, the commission shall process any application submitted to the commission on or before January 31, 1984, for renewal of a license to operate a PCB or hazardous waste disposal facility operating on the effective date of this Act, according to the provisions of ORS 459.410 to 459.450 and 459.460 to 459.690 as those sections read before the effective date of this Act. A license for which an application to renew the license was submitted according to the criteria of this section shall continue in full force and effect until the commission either issues or denies a renewal license.

SECTION 49. ORS 459.530 is repealed.

SECTION 50. This Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Act takes effect on its passage.

Approved by the Governor July 13, 1985
 Filed in the office of Secretary of State July 15, 1985

CHAPTER 671

AN ACT

SB 170

Relating to support; creating new provisions; amending ORS 23.170, 23.175, 23.760, 23.765, 23.789, 109.015, 109.175, 109.252, 109.254, 109.256, 109.258, 237.201, 239.261, 416.400, 416.405, 416.410, 416.415, 416.425, 416.430, 416.435, 416.440, 416.455 and 416.470; and declaring an emergency.

Be It Enacted by the People of the State of Oregon:

ARTICLE I

INCOME WITHHOLDING AND PAYMENT RECORDS

SECTION 1. ORS 23.170 is amended to read:

23.170. All pensions granted to any person in recognition by reason of a period of employment by or service for the government of the United States, or any state, or political subdivision of any state, or any municipality, person, partnership, association or corporation, shall be exempt from execution and all other process, mesne or final, except executions or other process arising out of a support obligation or an order or notice entered or issued pursuant to ORS 23.777 to 23.783, section 4 of this 1985 Act, ORS 416.445 or 419.515. Such exemption shall be effective without necessity of claim thereof by the pensioner.

SECTION 2. ORS 23.175 is amended to read:

23.175. As used in this section, [and] ORS 23.185 and section 4 of this 1985 Act:

(1) "Disposable earnings" means that part of the earnings of an individual remaining after the deduction from those earnings of any amounts required to be withheld by law.

(2) "Earnings" means compensation paid or payable for personal services, whether denominated as wages, salary, commission, bonus or otherwise, and includes periodic payments pursuant to a pension or retirement program.

(3) "Employer" means any entity or individual who engages a person to perform work or services for which compensation is given in periodic payments or otherwise, even though the relationship of the person so engaged to the employer may be as an independent contractor for other purposes.

[(3)] (4) "Garnishment" means any legal or equitable procedure through which the earnings of an individual are required to be withheld for payment of a debt. "Garnishment" does not include the procedure authorized by section 4 of this 1985 Act, ORS 23.777, 23.783, 416.445 and 419.515.

NOTE: Section 3 was deleted by amendment. Subsequent sections were not renumbered.

SECTION 4. (1) In addition to any other remedy provided by law for the enforcement of support, when a support order is or has been issued in Oregon by the circuit court or the administrator, as defined in ORS 416.400, or has been registered in Oregon, and current support payment records are being maintained by the Department of Human Resources, then so much of an obligor's disposable earnings must be withheld in accordance with subsections (2) to (14) of this section as is necessary to comply with the order and provide for the payment of any fee to the employer which may be required. Withholding shall occur without the need for any amendment to the support order involved or for any further action, other than those actions required under this section, by the court or administrator.

A List of Reports on the Siting of Hazardous Waste Management Facilities
Reviewed by the Department

1. Costs and Benefits to Local Government Due to the Presence of a Hazardous Waste Management Facility and Related Compensation Issues, Univ. of North Carolina Institute of Environmental Studies, 1985.
2. Not-In-My-Backyard--Community Reaction to Locally Unwanted Land Use, Univ. of Virginia Institute of Environmental Negotiation, 1985.
3. Siting Hazardous Waste Management Facilities--A Handbook, The Conservation Foundation, 1983.
4. Hazardous Waste Management: A Review of Social Concerns and Aspects of Public Involvement, Alberta Environmental Office, 1985.
5. Should Minnesota Dispose of Its Own Hazardous Waste?--Is It a Moral Issue?, Carver County, Minn. Hazardous Waste Report, 1985.
6. A Survey of Approaches by Other States in Establishing Criteria for the Location of Hazardous Waste Facilities, Ray C. Weston, Inc., for the Alaska Department of Environmental Conservation, 1985.
7. A Citizen's Guide to the Major Hazardous Waste Facilities Siting Act, New Jersey Hazardous Waste Facilities Siting Commission, 1983.
8. Approaches to Hazardous Waste Facility Siting in the United States, Massachusetts Hazardous Waste Facility Site Safety Council, 1984.
9. Review of State Siting Criteria for the Location of Hazardous Waste Land Treatment, Storage and Disposal Facilities, U.S. E.P.A. Office of Solid Waste, 1984.
10. Improvements in Siting Hazardous Waste Facilities, California Office of Planning and Research, 1982.
11. The Keystone Siting Process Handbook--A New Approach to Siting Hazardous Waste Management Facilities, Texas Department of Water Resources, 1984.
12. Charting a Course--Public Participation in the Siting of Hazardous Waste Facilities, Minnesota Waste Management Board, 1981.
13. Hazardous Waste Management Plans of Connecticut, Pennsylvania, Minnesota, Michigan, New Jersey and New York.
14. State Hazardous Waste Facility Siting Laws and/or Rules of Alaska, California, Connecticut, Colorado, Iowa, Maryland, Minnesota, New Jersey, New York, Pennsylvania, Texas, Utah, Virginia, Washington and Alberta.

Policy Advisory Committee

John C. Beatty, Jr. (Chairman)
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Donna Brunello
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Mike Caldwell
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Redmond

Dan Saltzman
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E.J. (Jack) Weathersbee
Portland

ZF802.6

Attachment 8
Agenda Item
March 14, 1986
EQC Meeting

Technical Advisors

Paul Henry
Oregon Public Utility Commission

Mike Gearheard
EPA

Max Klotz
Oregon Dept. of Transportation

Wendy Sims
DEQ-Air Quality

Brent Lake
Oregon LCDC

Maggie Conley
DEQ-Intergovernment
Coordination

Dr. Frank Dost
Dept. of Ag-Chemistry, O.S.U.

Larry Patterson
DEQ-Water Quality

Dr. John Googins
State Health Division

Neil Mullane
DEQ-Hazardous Waste

Russ Nebon
Chief Planner, Marion County

Stan Biles
DEQ-Director's Office

Jo Brooks
DEQ-Public Affair

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Sec.

Subpart D—Storage and Disposal

- 761.60 Disposal requirements.
- 761.65 Storage for disposal.
- 761.70 Incineration.
- 761.75 Chemical waste landfills.
- 761.79 Decontamination.

Subpart E—Exemptions

- 761.80 Manufacturing, processing, and distribution in commerce exemptions.

Subparts F-1—[Reserved]

Subpart J—Records and Reports

- 761.180 Records and monitoring.
- 761.185 Certification program and retention or records by importers and persons generating PCBs in excluded manufacturing processes.
- 761.187 Reporting importers and by persons generating PCBs in excluded manufacturing processes.
- 761.193 Maintenance of monitoring records by persons who import, manufacture, process, distribute in commerce, or use chemicals containing inadvertently generated PCBs.

AUTHORITY: Secs. 6, 8, and 12, Toxic Substances Control Act, 15 U.S.C. 2605, 2607, and 2611.

Subpart A—General

§ 761.1 Applicability.

(a) This part establishes prohibitions of, and requirements for, the manufacture, processing, distribution in commerce, use, disposal, storage, and marking of PCBs and PCB Items.

(b) This part applies to all persons who manufacture, process, distribute in commerce, use, or dispose of PCBs or PCB Items. Substances that are regulated by this rule include, but are not limited to, dielectric fluids, contaminated solvents, oils, waste oils, heat transfer fluids, hydraulic fluids, paints, sludges, slurries, dredge spoils, soils, materials contaminated as a result of spills, and other chemical substances or combination of substances, including impurities and by-products and any byproduct, intermediate or impurity manufactured at any point in a process. Most of the provisions of this part apply to PCBs only if PCBs are present in concentrations above a specified level. For example,

PART 761—POLYCHLORINATED BIPHENYLS (PCBs) MANUFACTURING, PROCESSING, DISTRIBUTION IN COMMERCE, AND USE PROHIBITIONS

Subpart A—General

Sec.

- 761.1 Applicability.
- 761.3 Definitions.
- 761.19 References.

Subpart B—Manufacturing, Processing, Distribution in Commerce, and Use of PCBs and PCB Items

- 761.20 Prohibitions.
- 761.30 Authorizations.

Subpart C—Marking of PCBs and PCB Items

- 761.40 Marking requirements.
- 761.45 Marking formats.

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March 14, 1986

§ 761.3

Subpart D applies generally to materials at concentrations of 50 parts per million (ppm) and above. Also certain provisions of Subpart B apply to PCBs inadvertently generated in manufacturing processes at concentrations specified in the definition of "PCB" under § 761.3. No provision specifying a PCB concentration may be avoided as a result of any dilution, unless otherwise specifically provided.

(c) Definitions of the terms used in these regulations are in Subpart A. The basic requirements applicable to disposal and marking of PCBs and PCB Items are set forth in Subpart D—Disposal of PCBs and PCB Items and in Subpart C—Marking of PCBs and PCB Items. Prohibitions applicable to PCB activities are set forth in Subpart B—Manufacture, Processing, Distribution in Commerce, and Use of PCBs and PCB Items. Subpart B also includes authorizations from the prohibitions. Subparts C and D set forth the specific requirements for disposal and marking of PCBs and PCB Items.

(d) Section 15 of the Toxic Substances Control Act (TSCA) states that failure to comply with these regulations is unlawful. Section 16 imposes liability for civil penalties upon any person who violates these regulations, and the Administrator can establish appropriate remedies for any violations subject to any limitations included in section 16 of TSCA. Section 16 also subjects a person to criminal prosecution for a violation which is knowing or willful. In addition, section 17 authorizes Federal district courts to enjoin activities prohibited by these regulations, compel the taking of actions required by these regulations, and issue orders to seize PCBs and PCB Items manufactured, processed or distributed in violation of these regulations.

(e) These regulations do not preempt other more stringent Federal statutes and regulations.

(f) Unless and until superseded by any new more stringent regulations issued under EPA authorities, or any permits or any pretreatment requirements issued by EPA, a state or local government that affect release of PCBs to any particular medium:

(1) Persons who inadvertently manufacture or import PCBs generated as unintentional impurities in excluded manufacturing processes, as defined in § 761.3, are exempt from the requirements of Subpart B of this part, provided that such persons comply with Subpart J of this part, as applicable.

(2) Persons who process, distribute in commerce, or use products containing PCBs generated in excluded manufacturing processes defined in § 761.3 are exempt from the requirements of Subpart B provided that such persons comply with Subpart J of this part, as applicable.

(3) Persons who process, distribute in commerce, or use products containing recycled PCBs defined in § 761.3, are exempt from the requirements of Subpart B of this part, provided that such persons comply with Subpart J of this part, as applicable.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605))

(44 FR 31542, May 31, 1979, as amended at 49 FR 28189, July 10, 1984)

§ 761.3 Definitions.

For the purpose of this part:

"Administrator" means the Administrator of the Environmental Protection Agency, or any employee of the Agency to whom the Administrator may either herein or by order delegate his authority to carry out his functions, or any person who shall by operation of law be authorized to carry out such functions.

"Agency" means the United States Environmental Protection Agency.

"Byproduct" means a chemical substance produced without separate commercial intent during the manufacturing or processing of another chemical substance(s) or mixture(s).

"Capacitor" means a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric. Types of capacitors are as follows:

(1) "Small capacitor" means a capacitor which contains less than 1.36 kg (3 lbs.) of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 1,639 cubic centi-

meters (100 cubic inches) may be considered to contain less than 1.36 kgs (3 lbs.) of dielectric fluid and a capacitor whose total volume is more than 3,278 cubic centimeters (200 cubic inches) must be considered to contain more than 1.36 kg (3 lbs.) of dielectric fluid. A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs.).

(2) "Large high voltage capacitor" means a capacitor which contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates at 2,000 volts (a.c. or d.c.) or above.

(3) "Large low voltage capacitor" means a capacitor which contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates below 2,000 volts (a.c. or d.c.).

"Chemical substance", (1) except as provided in paragraph (2) of this definition, means any organic or inorganic substance of a particular molecular identity, including: any combination of such substances occurring in whole or part as a result of a chemical reaction or occurring in nature, and any element or uncombined radical.

(2) Such term does not include: any mixture; any pesticide (as defined in the Federal Insecticide, Fungicide, and Rodenticide Act) when manufactured, processed, or distributed in commerce for use as a pesticide; tobacco or any tobacco product; any source material, special nuclear material, or byproduct material (as such terms are defined in the Atomic Energy Act of 1954 and regulations issued under such Act); any article the sale of which is subject to the tax imposed by section 4181 of the Internal Revenue Code of 1954 (determined without regard to any exemptions from such tax provided by section 4182 or section 4221 or any provisions of such Code); and any food, food additive, drug, cosmetic, or device (as such terms are defined in section 201 of the Federal Food, Drug, and Cosmetic Act) when manufactured, processed, or distributed in commerce for use as a food, food additive, drug, cosmetic, or device.

"Chemical waste landfill" means a landfill at which protection against

risk of injury to health or the environment from migration of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as specified in § 761.75.

"Commerce" means trade, traffic, transportation, or other commerce:

(1) Between a place in a State and any place outside of such State, or

(2) Which affects trade, traffic, transportation, or commerce described in paragraph (1) of this definition.

"Disposal" means intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB Items.

"Distribute in commerce" and "Distribution in Commerce" when used to describe an action taken with respect to a chemical substance, mixture, or article containing a substance or mixture means to sell, or the sale of, the substance, mixture, or article in commerce; to introduce or deliver for introduction into commerce, or the introduction or delivery for introduction into commerce of the substance, mixture, or article; or to hold or the holding of, the substance, mixture, or article after its introduction into commerce.

"Excluded manufacturing process" means a manufacturing process in which quantities of PCBs, as determined in accordance with the definition of inadvertently generated PCBs, calculated as defined, and from which releases to products, air, and water meet the requirements of paragraphs (1) through (5) of this definition, or the importation of products containing PCBs as unintentional impurities, which products meet the requirements of paragraph (1) and (2) of this definition.

(1) The concentration of inadvertently generated PCBs in products leaving any manufacturing site or imported into the United States must have an annual average of less than 25 ppm, with a 50 ppm maximum.

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(2) The concentration of inadvertently generated PCBs in the components of detergent bars leaving the manufacturing site or imported into the United States must be less than 5 ppm.

(3) The release of inadvertently generated PCBs at the point at which emissions are vented to ambient air must be less than 10 ppm.

(4) The amount of inadvertently generated PCBs added to water discharged from a manufacturing site must be less than 100 micrograms per resolvable gas chromatographic peak per liter of water discharged.

(5) Disposal of any other process wastes above concentrations of 50 ppm PCB must be in accordance with Subpart D of this part.

"Fluorescent light ballast" means a device that electrically controls fluorescent light fixtures and that includes a capacitor containing 0.1 kg or less of dielectric.

"Impurity" means a chemical substance which is unintentionally present with another chemical substance.

"Incinerator" means an engineered device using controlled flame combustion to thermally degrade PCBs and PCB Items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers.

"Leak" or "leaking" means any instance in which a PCB Article, PCB Container, or PCB Equipment has any PCBs on any portion of its external surface.

"Manufacture" means to produce, manufacture, or import into the customs territory of the United States.

"Manufacturing process" means all of a series of unit operations operating at a site, resulting in the production of a product.

"Mark" means the descriptive name, instructions, cautions, or other information applied to PCBs and PCB Items, or other objects subject to these regulations.

"Marked" means the marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any

other method that meets the requirements of these regulations.

"Mixture" means any combination of two or more chemical substances if the combination does not occur in nature and is not, in whole or in part, the result of a chemical reaction; except that such term does include any combination which occurs, in whole or in part, as a result of a chemical reaction if none of the chemical substances comprising the combination is a new chemical substance and if the combination could have been manufactured for commercial purposes without a chemical reaction at the time the chemical substances comprising the combination were combined.

"Municipal solid wastes" means garbage, refuse, sludges, wastes, and other discarded materials resulting from residential and non-industrial operations and activities, such as household activities, office functions, and commercial housekeeping wastes.

"PCB" and "PCBs" means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance. Refer to § 761.1(b) for applicable concentrations of PCBs. PCB and PCBs as contained in PCB Items are defined in § 761.3. For any purposes under this part, inadvertently generated non-Aroclor PCBs are defined as the total PCBs calculated following division of the quantity of monochlorinated biphenyls by 50 and dichlorinated biphenyls by 5.

"PCB Article" means any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB Article" includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB Article.

"PCB Article Container" means any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB Articles or PCB Equipment, and whose surface(s) has not been in direct contact with PCBs.

"PCB Container" means any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) has been in direct contact with PCBs.

"PCB Equipment" means any manufactured item, other than a PCB Container or a PCB Article Container, which contains a PCB Article or other PCB Equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.

"PCB Item" is defined as any PCB Article, PCB Article Container, PCB Container, or PCB Equipment, that deliberately or unintentionally contains or has a part of it any PCB or PCBs.

"PCB Transformer" means any transformer that contains 500 ppm PCB or greater.

"PCB-Contaminated Electrical Equipment" means any electrical equipment, including but not limited to transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, and cable, that contain 50 ppm or greater PCB, but less than 500 ppm PCB. Oil-filled electrical equipment other than circuit breakers, reclosers, and cable whose PCB concentration is unknown must be assumed to be PCB-Contaminated Electrical Equipment. (See § 761.30 (a) and (h) for provisions permitting reclassification of electrical equipment containing 500 ppm or greater PCBs to PCB-Contaminated Electrical Equipment).

"Person" means any natural or judicial person including any individual, corporation, partnership, or association; any State or political subdivision thereof; any interstate body; and any department, agency, or instrumentality of the Federal Government.

"Posing an exposure risk to food or feed" means being in any location where human food or animal feed

products could be exposed to PCBs released from a PCB Item. A PCB Item poses an exposure risk to food or feed if PCBs released in any way from the PCB Item have a potential pathway to human food or animal feed. EPA considers human food or animal feed to include items regulated by the U.S. Department of Agriculture or the Food and Drug Administration as human food or animal feed; this includes direct additives. Food or feed is excluded from this definition if it is used or stored in private homes.

"Process" means the preparation of a chemical substance or mixture, after its manufacture, for distribution in commerce:

(1) In the same form or physical state as, or in a different form or physical state from, that in which it was received by the person so preparing such substance or mixture, or

(2) As part of an article containing the chemical substance or mixture.

"Qualified incinerator" means one of the following:

(1) An incinerator approved under the provisions of § 761.70. Any concentration of PCBs can be destroyed in an incinerator approved under § 761.70.

(2) A high efficiency boiler approved under the provisions of § 761.60(a)(3). Only PCBs in concentrations below 500 ppm can be destroyed in a high-efficiency boiler approved under § 761.60(a)(3).

(3) An incinerator approved under section 3005(c) of the Resource Conservation and Recovery Act (42 U.S.C. 6925(c)) (RCRA). Only PCBs in concentrations below 50 ppm can be destroyed in a RCRA-approved incinerator. The manufacturer seeking to qualify a process as a controlled waste process by disposing of wastes in a RCRA-approved incinerator must make a determination that the incinerator is capable of destroying less readily burned compounds than the PCB homologs to be destroyed. The manufacturer may use the same guidance used by EPA in making such a determination when issuing an approval under section 3005(c) of RCRA. The manufacturer is also responsible for obtaining a reasonable assurance that the incinerator, when burning PCB wastes, will be operated under condi-

tions which have been shown to enable the incinerator to destroy the less readily burned compounds.

"Recycled PCBs" are defined as those intentionally manufactured PCBs which appear in the processing of paper products or asphalt roofing materials as PCB-contaminated raw materials and which meet the requirements of (1) through (5) of this definition.

(1) The concentration of Aroclor PCBs in paper products leaving any manufacturing site or imported into the United States must have an annual average of less than 25 ppm with a 50 ppm maximum.

(2) There are no detectable concentrations of Aroclor PCBs in asphalt roofing materials.

(3) The release of Aroclor PCBs at the point at which emissions are vented to ambient air must be less than 10 ppm.

(4) The amount of Aroclor PCBs added to water discharged from a processing site must at all times be less than 3 micrograms per liter ($\mu\text{g}/\text{l}$) for total Aroclors (roughly 3 parts per billion (3 ppb)).

(5) Disposal of any other process wastes above concentrations of 50 ppm PCB must be in accordance with Subpart D of this part.

"Sale for purposes other than resale" means sale of PCBs for purposes of disposal and for purposes of use, except where use involves sale for distribution in commerce. PCB Equipment which is first leased for purposes of use any time before July 1, 1979, will be considered sold for purposes other than resale.

"Small quantities for research and development" means any quantity of PCBs (1) that is originally packaged in one or more hermetically sealed containers of a volume of no more than five (5.0) milliliters, and (2) that is used only for purposes of scientific experimentation or analysis, or chemical research on, or analysis of, PCBs, but not for research or analysis for the development of a PCB product.

"Storage for disposal" means temporary storage of PCBs that have been designated for disposal.

"Transport vehicle" means a motor vehicle or rail car used for the trans-

portation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle.

"Totally enclosed manner" means any manner that will ensure no exposure of human beings or the environment to any concentration of PCBs.

"Waste Oil" means used products primarily derived from petroleum, which include, but are not limited to, fuel oils, motor oils, gear oils, cutting oils transmission fluids, hydraulic fluids, and dielectric fluids.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[49 FR 25239, June 20, 1984, as amended at 49 FR 28189, July 10, 1984; 49 FR 29066, July 18, 1984; 49 FR 44638, Nov. 8, 1984]

§ 761.19 References.

- (a) [Reserved]
- (b) *Incorporations by reference.* The following material is incorporated by reference, and is available for inspection at the Office of the Federal Register Information Center, Rm. 8301, 1100 L St. NW., Washington, DC 20408. These incorporations by reference were approved by the Director of the Office of the Federal Register. These materials are incorporated as they exist on the date of approval and a notice of any change in these materials will be published in the FEDERAL REGISTER. Copies of the incorporated material may be obtained from the Environmental Protection Agency Document Control Officer (TS-793), Office of Pesticides and Toxic Substances, EPA, Rm. 106, 401 M St., SW., Washington, D.C. 20460, and from the American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103.

References	CFR Citation
ASTM D-93-80 Standard Test Method for Flash Point by Pensky-Martens Closed Tester.	§ 761.60(a)(3)(iii)(B)(i); § 761.75(b)(8)(iii).
ASTM D-129-64 (Reapproved 1978) Standard Test Method for Sulfur in Petroleum Products (General Bomb Method).	§ 761.60(a)(3)(iii)(B)(ii).
ASTM D-240-76 (Reapproved 1980) Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuel by Bomb Calorimeter.	§ 761.60(a)(3)(iii)(B)(i).

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References	CFR Citation
ASTM D-482-80 Standard Test Method for Ash from Petroleum Products.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-524-81 Standard Test Method for Ramsbottom Carbon Residue of Petroleum Products.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-808-81 Standard Test Method for Chlorine in New and Used Petroleum Products (Bomb Method).	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-923-81 Standard Test Method for Sampling Electrical Insulating Liquids.	§ 761.60(g)(1)(ii); § 761.60(g)(2)(ii).
ASTM D-1266-80 (Reapproved 1981) Standard Test Method for Sulfur in Petroleum Products (Lamp Method).	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-1756-83 (Reapproved 1977) Methods for Water and Sediment in Crude Oils and Fuel Oils by Centrifuge.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-2158-80 Standard Test Method for Residues in Liquefied Petroleum (LP) Gas.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-2709-68 (Reapproved 1982) Standard Test Method for Water and Sediment in Distillate Fuel by Centrifuge.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-2784-80 Standard Test Method for Sulfur in Liquefied Petroleum Gases (Oxyhydrogen Burner or Lamp).	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-3176-73 (Reapproved 1979) Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coke and Coal.	§ 761.75(b)(6)(iii).
ASTM D-3276-78 (Reapproved 1982) Standard Test Methods for Flash Point of Liquid by Setflash Closed Tester.	§ 761.60(a)(3)(iii)(B)(6).
ASTM E-258-67 (Reapproved 1982) Standard Test Method for Total Nitrogen Inorganic Material by Modified KJELDAHL Method.	§ 761.60(a)(3)(iii)(B)(6).

[47 FR 22098, May 21, 1982, as amended at 49 FR 29067, July 18, 1984; 49 FR 36648, Sept. 19, 1984]

Subpart B—Manufacturing, Processing, Distribution in Commerce, and Use of PCBs and PCB Items

§ 761.20 Prohibitions.

Except as authorized in § 761.30, the activities listed in paragraphs (a) and (d) of this section are prohibited pursuant to section 6(e)(2) of TSCA. The requirements set forth in paragraphs (b) and (c) of this section concerning export and import of PCBs for purposes of disposal and PCB Items for purposes of disposal are established pursuant to section 6(e)(1) of TSCA. Subject to any exemptions granted

pursuant to section 6(e)(3)(B) of TSCA, the activities listed in paragraphs (b) and (c) of this section are prohibited pursuant to section 6(e)(3)(A) of TSCA. In addition, the Administrator hereby finds, under the authority of section 12(a)(2) of TSCA, that the manufacture, processing, and distribution in commerce of PCBs at concentrations of 50 ppm or greater and PCB Items with PCB concentrations of 50 ppm or greater present an unreasonable risk of injury to health within the United States. This finding is based upon the well-documented human health and environmental hazard of PCB exposure, the high probability of human and environmental exposure to PCBs and PCB Items from manufacturing, processing, or distribution activities; the potential hazard of PCB exposure posed by the transportation of PCBs or PCB Items within the United States; and the evidence that contamination of the environment by PCBs is spread far beyond the areas where they are used. In addition, the Administrator hereby finds, for purposes of section 6(e)(2)(C) of TSCA, that any exposure of human beings or the environment to PCBs, as measured or detected by any scientifically acceptable analytical method, may be significant, depending on such factors as the quantity of PCBs involved in the exposure, the likelihood of exposure to humans and the environment, and the effect of exposure. For purposes of determining which PCB Items are totally enclosed, pursuant to section 6(e)(2)(C) of TSCA, since exposure to such Items may be significant, the Administrator further finds that a totally enclosed manner is a manner which results in no exposure to humans or the environment to PCBs. The following activities are considered totally enclosed: distribution in commerce of intact, nonleaking electrical equipment such as transformers (including transformers used in railway locomotives and self-propelled cars), capacitors, electromagnets, voltage regulators, switches (including sectionalizers and motor starters), circuit breakers, reclosers, and cable that contain PCBs at any concentration and processing and distribution in commerce of PCB Equip-

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ment containing an intact, nonleaking PCB Capacitor. See paragraph (c)(1) of this section for provisions allowing the distribution in commerce of PCBs and PCB Items.

(a) No person may use any PCB, or any PCB Item regardless of concentration, in any manner other than in a totally enclosed manner within the United States unless authorized under § 761.30, except that an authorization is not required to use those PCBs or PCB Items resulting from an excluded manufacturing process or recycled PCBs defined in § 761.3, provided all applicable conditions of § 761.1(f) are met.

(b) No person may manufacture PCBs for use within the United States or manufacture PCBs for export from the United States without an exemption except that:

(1) No person may manufacture PCBs for use within the United States or manufacture PCBs for export from the United States without an exemption, except that an exemption is not required for PCBs manufactured in an excluded manufacturing process as defined in § 761.3, provided that all applicable conditions of § 761.1(f) are met.

(2) PCBs at concentrations less than 50 ppm may be imported or exported for purposes of disposal.

(c) No person may process or distribute in commerce any PCB, or any PCB Item regardless of concentration, for use within the United States or for export from the United States without an exemption, except that an exemption is not required to process or distribute in commerce PCBs or PCB Items resulting from an excluded manufacturing process as defined in § 761.3, or to process or distribute in commerce recycled PCBs as defined in § 761.3 provided that all applicable conditions of § 761.1(f) are met.

(1) PCBs at concentrations of 50 ppm or greater, or PCB Items with PCB concentrations of 50 ppm or greater, sold before July 1, 1979 for purposes other than resale may be distributed in commerce only in a totally enclosed manner after that date.

(2) PCBs at concentrations of 50 ppm or greater, or PCB Items with PCB concentrations of 50 ppm or

greater may be processed and distributed in commerce in compliance with the requirements of this Part for purposes of disposal in accordance with the requirements of § 761.60.

(3) PCBs or PCB Items may be exported for disposal until May 1, 1980, if an export notice is submitted at least thirty (30) days before the first shipment in any calendar year leaves the customs territory of the United States. Export notices must be submitted to the Document Control Officer (TS-793), Office of Toxic Substances, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460. The generator of the PCB waste material intended for disposal, or an agent acting on his behalf, must certify to the best of his knowledge and belief that the information is complete and accurate. Each notice should contain the following information:

(i) Name, company name, address, and telephone number of the owner of the PCB waste material to be exported and the name and address of any person or agent acting on his behalf;

(ii) Estimated quantity of wastes to be shipped during the calendar year and the estimated number of shipments to be made and the dates when such shipments are expected to leave the customs territory of the United States;

(iii) Description of the PCBs or PCB Items being exported;

(iv) Country(s) of destination for the shipments;

(v) Name and address of facility(s) receiving the shipment and person(s) responsible for receiving the shipment(s).

(vi) Method(s) of disposal and precautions taken to control release into the environment.

(vii) No less than 30 days after the end of each calendar quarter (March 31, June 30, September 30, and December 31) during which PCBs were exported for disposal, each person exporting the PCBs must submit a report to the Document Control Officer (TS-793), Office of Toxic Substances, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460. The report shall list the quantity of PCB wastes

in each shipment made during the quarter and include the date when each shipment left the customs territory of the United States and the information specified in paragraphs (c)(3)(i) and (iii) through (vi) of this section. If the quantity of wastes shipped during the calendar year exceeds by 25 percent or more the estimated quantities reported in paragraph (c)(3)(ii) of this section, a special export notice must be submitted to the Document Control Officer (TS-793) at the address given in paragraph (c)(3) at least 30 days before any additional shipments leave the customs territory of the United States and the notice shall include the information specified in paragraphs (c)(3) (i) through (vi) of this section.

(viii) Any person expecting to export PCB wastes for disposal in calendar year 1980 must submit an export notice at least thirty (30) days before the first shipment leaves the customs territory of the United States to the Document Control Officer (TS-793) at the address given in paragraph (c)(3) of this section, and the notice shall contain the information listed in paragraphs (c)(3) (i) through (vi) of this section.

(4) PCBs, at concentrations of less than 50 ppm, or PCB Items, with concentrations of less than 50 ppm, may be processed and distributed in commerce for purposes of disposal.

(d) The use of waste oil that contains any detectable concentration of PCB as a sealant, coating, or dust control agent is prohibited. Prohibited uses include, but are not limited to, road oiling, general dust control, use as a pesticide or herbicide carrier, and use as a rust preventative on pipes.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020, 15 U.S.C. 2605)

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at 49 FR 25241, June 20, 1984; 49 FR 28190, July 10, 1984; 49 FR 44638, Nov. 8, 1984]

§ 761.30 Authorizations.

The following non-totally enclosed PCB activities are authorized pursuant to section 6(e)(2)(B) of TSCA:

(a) Use in and servicing of transformers (other than railroad transformers). PCBs at any concentration

may be used in transformers (other than transformers for railroad locomotives and self-propelled railroad cars) and may be used for purposes of servicing including rebuilding these transformers for the remainder of their useful lives, subject to the following conditions:

(1) Use conditions. (i) After October 1, 1985, the use and storage for reuse of PCB Transformers that pose an exposure risk to food or feed is prohibited.

(ii) A visual inspection of each PCB Transformer (as defined in the definition of "PCB Transformer" under § 761.3) in use or stored for reuse shall be performed at least once every three months. These inspections may take place any time during the three month periods: January-March, April-June, July-September, and October-December as long as there is a minimum of 30 days between inspections. The visual inspection must include investigation for any leak of dielectric fluid on or around the transformer. The extent of the visual inspections will depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer being inspected.

(iii) If a PCB Transformer is found to have a leak which results in any quantity of PCBs running off or about to run off the external surface of the transformer, then the transformer must be repaired or replaced to eliminate the source of the leak. In all cases any leaking material must be cleaned up and properly disposed of according to disposal requirements of § 761.60. Cleanup of the released PCBs must be initiated as soon as possible, but in no case later than 48 hours of its discovery. Until appropriate action is completed, any active leak of PCBs must be contained to prevent exposure of humans or the environment and inspected daily to verify containment of the leak. Trenches, dikes, buckets, and pans are examples of proper containment measures.

(iv) Records of inspection and maintenance history shall be maintained at least 3 years after disposing of the transformer and shall be made available for inspection, upon request, by

EPA. Such records shall contain the following information for each PCB Transformer:

(A) Its location.

(B) The date of each visual inspection and the date that a leak was discovered, if different from the inspection date.

(C) The person performing the inspection.

(D) The location of any leak(s).

(E) An estimate of the amount of dielectric fluid released from any leak.

(F) The date of any cleanup, containment, repair, or replacement.

(G) A description of any cleanup, containment, or repair performed.

(H) The results of any containment and daily inspection required for uncorrected active leaks.

(v) A reduced visual inspection frequency of at least once every 12 months applies to PCB Transformers that utilize either of the following risk reduction measures. These inspections may take place any time during the calendar year as long as there is a minimum of 180 days between inspections.

(A) A PCB Transformer which has impervious, undrained, secondary containment capacity of at least 100 percent of the total dielectric fluid volume of all transformers so contained, or

(B) A PCB Transformer which has been tested and found to contain less than 60,000 ppm PCBs (after three months of in-service use if the transformer has been serviced for purposes of reducing the PCB concentration).

(vi) An increased visual inspection frequency of at least once every week applies to any PCB Transformer in use or stored for reuse which poses an exposure risk to food or feed. The user of a PCB Transformer posing an exposure risk to food or feed is responsible for the inspection, recordkeeping, and maintenance requirements under this section until the user notifies the owner that the transformer may pose an exposure risk to food or feed. Following such notification, it is the owner's ultimate responsibility to determine whether the PCB Transformer poses an exposure risk to food or feed.

(2) Servicing conditions. (i) Transformers classified as PCB-Contaminat-

ed Electrical Equipment (as defined in the definition of "PCB-Contaminated Electrical Equipment" under § 761.3) may be serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB.

(ii) Any servicing (including rebuilding) of PCB Transformers (as defined in the definition of "PCB Transformer" under § 761.3) that requires the removal of the transformer coil from the transformer casing is prohibited. PCB Transformers may be serviced (including topping off) with dielectric fluid at any PCB concentration.

(iii) PCBs removed during any servicing activity must be captured and either reused as dielectric fluid or disposed of in accordance with the requirements of § 761.60. PCBs from PCB Transformers must not be mixed with or added to dielectric fluid from PCB-Contaminated Electrical Equipment.

(iv) Regardless of its PCB concentration, dielectric fluids containing less than 500 ppm PCB that are mixed with fluids that contain 500 ppm or greater PCB must not be used as dielectric fluid in any electrical equipment. The entire mixture of dielectric fluid must be considered to be greater than 500 ppm PCB and must be disposed of in an incinerator that meets the requirements in § 761.70.

(v) A PCB Transformer may be converted to PCB-Contaminated Electrical Equipment or to a non-PCB Transformer and a transformer that is classified as PCB-Contaminated Electrical Equipment may be reclassified to a non-PCB Transformer by draining, refilling and/or otherwise servicing the transformer. In order to reclassify, the transformer's dielectric fluid must contain less than 500 ppm PCB (for conversion to PCB-Contaminated Electrical Equipment) or less than 50 ppm PCB (for conversion to a non-PCB Transformer) after a minimum of three months of in-service use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the transformer. In-service means that the transformer is used electrically under loaded conditions that raise the temperature of the dielectric fluid to at least 50° Centigrade. The Assistant Administrator

may grant, without further rulemaking, approval for the use of alternative methods that simulate the loaded conditions of in-service use. All PCBs removed from transformers for purposes of reducing PCB concentrations are subject to the disposal requirements of § 761.60.

(vi) Any dielectric fluid containing 50 ppm or greater PCB used for servicing transformers must be stored in accordance with the storage for disposal requirements of § 761.65.

(vii) Processing and distribution in commerce of PCBs for purposes of servicing transformers is permitted only for persons who are granted an exemption under TSCA 6(e)(3)(B).

(b) *Use in and servicing of railroad transformers.* PCBs may be used in transformers in railroad locomotives or railroad self-propelled cars ("railroad transformers") and may be processed and distributed in commerce for purposes of servicing these transformers in a manner other than a totally enclosed manner subject to the following conditions:

(1) *Use restrictions.* (i) After July 1, 1983, the number of railroad transformers containing a PCB concentration greater than 60,000 ppm (6.0 percent on a dry weight basis) in use by any affected railroad organization may not exceed two-thirds of the total railroad transformers containing PCBs in use by that organization on January 1, 1982.

(ii) After January 1, 1984, the number of railroad transformers containing a PCB concentration greater than 60,000 ppm in use by any affected railroad organization may not exceed one-third of the total railroad transformers containing PCBs in use by that organization on January 1, 1982.

(iii) After July 1, 1984, use of railroad transformers that contain dielectric fluids with a PCB concentration greater than 60,000 ppm is prohibited.

(iv) After July 1, 1985, the number of railroad transformers containing a PCB concentration greater than 1,000 ppm (0.1 percent on a dry weight basis) in use by any affected railroad organization may not exceed two-thirds of the total railroad transform-

ers containing PCBs in use by that organization on July 1, 1984.

(v) After January 1, 1986, the number of railroad transformers containing a PCB concentration greater than 1,000 ppm in use by any affected railroad organization may not exceed one-third of the total railroad transformers containing PCBs in use by that organization on July 1, 1984.

(vi) After July 1, 1986, use of railroad transformers that contain dielectric fluids with a PCB concentration greater than 1,000 ppm is prohibited.

(vii) The concentration of PCBs in the dielectric fluid contained in railroad transformers must be measured:

(A) Immediately upon completion of any authorized servicing of a railroad transformer conducted for the purpose of reducing the PCB concentration in the dielectric fluid in the transformer, and

(B) Between 12 and 24 months after each servicing conducted in accordance with paragraph (b)(1)(vii)(A) of this section;

(C) The data obtained as a result of paragraphs (b)(1)(vii) (A) and (B) of this section shall be retained until January 1, 1991.

(2) *Servicing restrictions.* (i) If the coil is removed from the casing of a railroad transformer (e.g., the transformer is rebuilt), after January 1, 1982, the railroad transformer may not be refilled with dielectric fluid containing a PCB concentration greater than 50 ppm;

(ii) After January 1, 1982, railroad transformers may only be serviced with dielectric fluid containing less than 60,000 ppm PCBs, except as provided in paragraph (b)(2)(i) of this section;

(iii) After January 1, 1984, railroad transformers may only be serviced with dielectric fluid containing less than 1000 ppm PCB, except as provided in paragraph (b)(2)(i) of this section;

(iv) Dielectric fluid may be filtered through activated carbon or otherwise industrially processed for the purpose of reducing the PCB concentration in the fluid;

(v) Any PCB dielectric fluid that is used to service PCB railroad transformers must be stored in accordance

with the storage for disposal requirements of § 761.65;

(vi) After July 1, 1979, processing and distribution in commerce of PCBs for purposes of servicing railroad transformers is permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(vii) A PCB Transformer may be converted to a PCB-Contaminated Transformer or to a non-PCB Transformer by draining, refilling, and/or otherwise servicing the railroad transformer. In order to reclassify, the railroad transformer's dielectric fluid must contain less than 500 ppm (for conversion to PCB-Contaminated Transformer) or less than 50 ppm PCB (for conversion to a non-PCB Transformer) after a minimum of three months of in-service use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the transformer.

(c) *Use in and servicing of mining equipment.* PCBs may be used in mining equipment and may be processed and distributed in commerce for purposes of servicing mining equipment in a manner other than a totally enclosed manner until January 1, 1982, subject to the following conditions:

(1) PCBs may be added to motors in mining equipment in mines or mining areas until January 1, 1982;

(2) PCB motors in loader-type mining equipment must be rebuilt as air-cooled or other non-PCB-containing motors whenever the motor is returned to a service shop for servicing;

(3) PCB motors in continuous miner-type equipment may be rebuilt as PCB motors until January 1, 1980;

(4) Any PCBs that are on hand to service or repair mining equipment must be stored in accordance with the storage for disposal requirements of § 761.65;

(5) After July 1, 1979, processing and distribution in commerce of PCBs for purposes of servicing mining equipment is permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(d) *Use in heat transfer systems.* After July 1, 1984, intentionally manufactured PCBs may be used in heat transfer systems in a manner other

than a totally enclosed manner at a concentration level of less than 50 ppm provided that the requirements of paragraphs (d) (1) through (7) of this section are met.

(1) Each person who owns a heat transfer system that ever contained PCBs at concentrations above 50 ppm must test for the concentration of PCBs in the heat transfer fluid of such a system no later than November 1, 1979, and at least annually thereafter. All test sampling must be performed at least three months after the most recent fluid refilling. When a test shows that the PCB concentration is less than 50 ppm, testing under this paragraph is no longer required.

(2) Within six months of a test performed under paragraph (d)(1) of this section that indicates that a system's fluid contains 50 ppm or greater PCB (0.005% on a dry weight basis), the system must be drained of the PCBs and refilled with fluid containing less than 50 ppm PCB. Topping-off with heat transfer fluids containing PCB concentrations of less than 50 ppm is permitted.

(3) After November 1, 1979, no heat transfer system that is used in the manufacture or processing of any food, drug, cosmetic or device, as defined in section 201 of the Federal Food, Drug, and Cosmetic Act, may contain transfer fluid with 50 ppm or greater PCB (0.005% on a dry weight basis).

(4) Addition of fluids containing PCB concentrations greater than 50 ppm is prohibited.

(5) Data obtained as a result of paragraph (d)(1) of this section must be retained for five years after the heat transfer system reaches 50 ppm PCB.

(6) Each person who owns a heat transfer system that contains PCBs must provide workers with gloves made of viton elastomer to protect workers from dermal exposure to PCBs.

(7) All persons who maintain a heat transfer system must wear viton elastomer gloves while doing maintenance work on that system.

(e) *Use in hydraulic systems.* After July 1, 1984, intentionally manufactured PCBs may be used in hydraulic systems in a manner other than a to-

tally enclosed manner at a concentration level of less than 50 ppm provided that the requirements in paragraphs (e) (1) through (7) of this section are met.

(1) Each person who owns a hydraulic system that ever contained PCBs at concentrations above 50 ppm must test for the concentration of PCBs in the hydraulic fluid of each system no later than November 1, 1979, and at least annually thereafter. All test sampling must be performed at least three months after the most recent fluid refilling. When a test shows that the PCB concentration is less than 50 ppm, testing under this paragraph is no longer required.

(2) Within six months of a test under paragraph (e)(1) of this section that indicates that a system's fluid contains 50 ppm or greater PCB (0.005% on a dry weight basis), the system must be drained of the PCBs and refilled with fluid containing less than 50 ppm PCB. Topping-off with hydraulic fluids containing PCB concentrations less than 50 ppm to reduce PCB concentrations is permitted.

(3) Addition of PCBs at concentrations of greater than 50 ppm is prohibited.

(4) Hydraulic fluid may be drained from a hydraulic system and filtered, distilled, or otherwise serviced in order to reduce the PCB concentration below 50 ppm.

(5) Data obtained as a result of paragraph (e)(1) of this section must be retained for five years after the hydraulic system reaches 50 ppm.

(6) Each person who owns a hydraulic system that contains PCBs must provide gloves made of viton elastomer to protect workers from dermal exposure to PCBs.

(7) All persons who maintain a hydraulic system that contains PCBs must wear viton elastomer gloves while doing maintenance work on that system.

(f) *Use in carbonless copy paper.* Carbonless copy paper containing PCBs may be used in a manner other than a totally enclosed manner indefinitely.

(g) *Pigments.* Diarylide and Phthalocyanin pigments that contain 50 ppm or greater PCB may be processed, dis-

tributed in commerce, and used in a manner other than a totally enclosed manner until January 1, 1982, except that after July 1, 1979, processing and distribution in commerce of diarylide or phthalocyanin pigments that contain 50 ppm or greater PCB is permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(h) *Use in and servicing of electromagnets, switches and voltage regulators.* PCBs at any concentration may be used in electromagnets, switches (including sectionalizers and motor starters), and voltage regulators and may be used for purposes of servicing this equipment (including rebuilding) for the remainder of their useful lives, subject to the following conditions:

(1) *Use conditions.* (i) After October 1, 1985, the use and storage for reuse of any electromagnet which poses an exposure risk to food or feed is prohibited if the electromagnet contains greater than 500 ppm PCBs.

(ii) A visual inspection of each electromagnet subject to paragraph (h)(1)(i) shall be performed at least once every week according to the conditions contained in § 761.30(a)(1)(iii) and (iv).

(2) *Servicing conditions.* (i) Servicing (including rebuilding) any electromagnet, switch, or voltage regulator with a PCB concentration of 500 ppm or greater which requires the removal and rework of the internal components is prohibited.

(ii) Electromagnets, switches, and voltage regulators classified as PCB-Contaminated Electrical Equipment (as defined in the definition of "PCB-Contaminated Electrical Equipment" under § 761.3) may be serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB.

(iii) PCBs removed during any servicing activity must be captured and either reused as dielectric fluid or disposed of in accordance with the requirements of § 761.60. PCBs from electromagnets switches, and voltage regulators with a PCB concentration of at least 500 ppm must not be mixed with or added to dielectric fluid from PCB-Contaminated Electrical Equipment.

(iv) Regardless of its PCB (concentration, dielectric fluids containing less than 500 ppm PCB) that are mixed with fluids that contain 500 ppm or greater PCB must not be used as dielectric fluid in any electrical equipment. The entire mixture of dielectric fluid must be considered to be greater than 500 ppm PCB and must be disposed of in an incinerator that meets the requirements of § 761.70.

(v) An electromagnet, switch or voltage regulator with a PCB concentration of at least 500 ppm may be converted to PCB-Contaminated Electrical Equipment or to a non-PCB classification and PCB-Contaminated Electrical Equipment may be reclassified to a non-PCB classification by draining, refilling and/or otherwise servicing the equipment. In order to be reclassified, the equipment's dielectric fluid must contain less than 500 ppm PCB (for conversion to PCB-Contaminated Electrical Equipment) or less than 50 ppm PCB (for conversion to a non-PCB classification) after a minimum of three months of in-service use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the equipment. In-service use means the equipment is used electrically under loaded conditions. The Assistant Administrator may grant, without further rulemaking, approval for the use of alternative methods that simulate the loaded conditions of in-service use. All PCBs removed from this equipment for purposes of reducing PCB concentrations are subject to the disposal requirements of § 761.60.

(vi) Any dielectric fluid containing 50 ppm or greater PCB used for servicing electromagnets, switches, or voltage regulators must be stored in accordance with the storage for disposal requirements of § 761.65.

(vii) Processing and distribution in commerce of PCBs for purposes of servicing electromagnets, switches or voltage regulators is permitted only for persons who are granted an exemption under TSCA 6(e)(3)(B).

(i) *Use in compressors and in the liquid of natural gas pipelines.* PCBs may be used indefinitely in the compressors and in the liquids of natural gas pipelines at a concentration level

of less than 50 ppm provided that they are marked in accordance with § 761.45(a).

(j) *Small quantities for research and development.* PCBs may be used in small quantities for research and development, as defined in § 761.3(ee), in a manner other than a totally enclosed manner, indefinitely. Manufacture, processing, and distribution in commerce of PCBs in small quantities for research and development is permitted only for persons who have been granted an exemption under TSCA section 6(e)(3)(B).

(k) *Microscopy mounting medium.* PCBs may be used as a permanent microscopic mounting medium in a manner other than a totally enclosed manner indefinitely. Manufacture, processing, and distribution in commerce of PCBs for purposes of use as a mounting medium are permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(l) *Use in capacitors.* PCBs at any concentration may be used in capacitors, subject to the following conditions:

(1) *Use conditions.* (i) After October 1, 1988, the use and storage for reuse of PCB Large High Voltage Capacitors and PCB Large Low Voltage Capacitors which pose an exposure risk to food or feed is prohibited.

(ii) After October 1, 1988, the use of PCB Large High Voltage Capacitors and PCB Large Low Voltage Capacitors is prohibited unless the capacitor is used within a restricted-access electrical substation or in a contained and restricted-access indoor installation. A restricted-access electrical substation is an outdoor, fenced or walled-in facility that restricts public access and is used in the transmission or distribution of electric power. A contained and restricted-access indoor installation does not have public access and has an adequate roof, walls, and floor to contain any release of PCBs within the indoor location.

(m) *Use in and servicing of circuit breakers, reclosers and cable.* PCBs at any concentration may be used in circuit breakers, reclosers, and cable and may be used for purposes of servicing this electrical equipment (including re-

building) for the remainder of their useful lives, subject to the following conditions:

(1) *Service conditions.* (i) Circuit breakers, reclosers, and cable may be serviced (including rebuilding) only with dielectric fluid containing less than 50 ppm PCB.

(ii) Any circuit breaker, recloser or cable found to contain at least 50 ppm PCBs may be serviced only in accordance with the conditions contained in 40 CFR 761.30(h)(2).

(n) *Microscopy immersion oil.* PCBs may be used as an immersion oil in fluorescence microscopy, in a manner other than a totally enclosed manner indefinitely. Manufacture, processing, and distribution in commerce of PCBs for purposes of use as a low fluorescence immersion oil are permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(o) *Optical liquids.* PCBs may be used as optical liquids in a manner other than a totally enclosed manner indefinitely. Manufacture, processing, and distribution in commerce of PCBs for purposes of use as optical liquids are permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(Approved by the Office of Management and Budget under control number 2070-0003)

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Subpart C—Marking of PCBs and PCB Items

§ 761.40 Marking requirements.

(a) Each of the following items in existence on or after July 1, 1978 shall be marked as illustrated in Figure 1 in § 761.44(a): The mark illustrated in Figure 1 is referred to as M_L throughout this subpart.

(1) PCB Containers;

(2) PCB Transformers at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal

from use if not already marked. [Marking of PCB-Contaminated Electrical Equipment is not required];

(3) PCB Large High Voltage Capacitors at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal from use if not already marked;

(4) Equipment containing a PCB Transformer or a PCB Large High Voltage Capacitor at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal of the equipment from use if not already marked;

(5) PCB Large Low Voltage Capacitors at the time of removal from use;

(6) Electric motors using PCB coolants (See also paragraph (e) of this section).

(7) Hydraulic systems using PCB hydraulic fluid (See also paragraph (e) of this section);

(8) Heat transfer systems (other than PCB Transformers) using PCBs (See also paragraph (e) of this section);

(9) PCB Article Containers containing articles or equipment that must be marked under paragraph (a) (1) through (8) of this section;

(10) Each storage area used to store PCBs and PCB Items for disposal.

(b) As of October 1, 1978, each transport vehicle shall be marked on each end and side with M_L as described in § 761.45(a) if it is loaded with PCB Containers that contain more than 45 kg (99.4 lbs.) of PCBs in the liquid phase or with one or more PCB Transformers (See also paragraph (e) of this section).

(c) As of January 1, 1979, the following PCB Articles shall be marked with mark M_L as described in § 761.45(a):

(1) All PCB Transformers not marked under paragraph (a) of this section [marking of PCB-Contaminated Electrical Equipment is not required];

(2) All PCB Large High Voltage Capacitors not marked under paragraph (a) of this section

(i) Will be marked individually with mark M_L , or

(ii) If one or more PCB Large High Voltage Capacitors are installed in a protected location such as on a power pole, or structure, or behind a fence;

the pole, structure, or fence shall be marked with mark M_L , and a record or procedure identifying the PCB Capacitors shall be maintained by the owner or operator at the protected location.

(d) As of January 1, 1979, all PCB Equipment containing a PCB Small Capacitor shall be marked at the time of manufacture with the statement, "This equipment contains PCB Capacitor(s)". The mark shall be of the same size as the mark M_L .

(e) As of October 1, 1979, applicable PCB Items in paragraph (a) (1), (6), (7), and (8) of this section containing PCBs in concentrations of 50 to 500 ppm and applicable transport vehicles in paragraph (b) of this section loaded with PCB Containers that contain more than 45 kg (99.4 lbs.) of liquid PCBs in concentrations of 50 ppm to 500 ppm shall be marked with mark M_L as described in § 761.45(a).

(f) Where mark M_L is specified but the PCB Article or PCB Equipment is too small to accommodate the smallest permissible size of mark M_L , mark M_S as described in § 761.45(b), may be used instead of mark M_L .

(g) Each large low voltage capacitor, each small capacitor normally used in alternating current circuits, and each fluorescent light ballast manufactured ("manufactured", for purposes of this sentence, means built) between July 1, 1978 and July 1, 1998 that do not contain PCBs shall be marked by the manufacturer at the time of manufacture with the statement, "No PCBs". The mark shall be of similar durability and readability as other marking that indicate electrical information, part numbers, or the manufacturer's name. For purposes of this paragraph marking requirement only is applicable to items built domestically or abroad after June 30, 1978.

(h) All marks required by this subpart must be placed in a position on the exterior of the PCB Items or transport vehicles so that the marks can be easily read by any persons inspecting or servicing the marked PCB Items or transport vehicles.

(i) Any chemical substance or mixture that is manufactured after the effective date of this rule and that contains less than 500 ppm PCB (0.05% on a dry weight basis), including PCB

that is a byproduct or impurity, must be marked in accordance with any requirements contained in the exemption granted by EPA to permit such manufacture and is not subject to any other requirement in this subpart unless so specified in the exemption. This paragraph applies only to containers of chemical substances or mixtures. PCB articles and equipment into which the chemical substances or mixtures are processed, are subject to the marking requirements contained elsewhere in this subpart.

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at 47 FR 37359, Aug. 25, 1982]

§ 761.45 Marking formats.

The following formats shall be used for marking:

(a) *Large PCB Mark— M_L .* Mark M_L shall be as shown in Figure 1, letters and striping on a white or yellow background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article, PCB Equipment, or PCB Container. The size of the mark shall be at least 15.25 cm (6 inches) on each side. If the PCB Article or PCB Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 5 cm (2 inches) on each side.

(b) *Small PCB Mark— M_S .* Mark M_S shall be as shown in Figure 2, letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article, PCB Equipment, or PCB Container. The mark shall be a rectangle 2.5 by 5 cm (1 inch by 2 inches). If the PCB Article or PCB Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 1 by 2 cm (.4 by .8 inches).

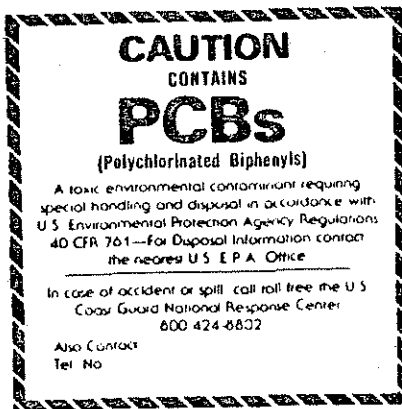


Figure 1

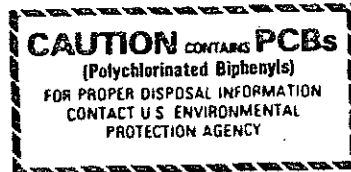


Figure 2

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982]

Subpart D—Storage and Disposal

NOTE: This subpart does not require removal of PCBs and PCB Items from service and disposal earlier than would normally be the case. However, when PCBs and PCB Items are removed from service and disposed of, disposal must be undertaken in accordance with these regulations. PCBs (including soils and debris) and PCB Items

which have been placed in a disposal site are considered to be "in service" for purposes of the applicability of this subpart. This subpart does not require PCBs and PCB Items landfilled prior to February 17, 1978 to be removed for disposal. However, if such PCBs or PCB Items are removed from the disposal site, they must be disposed of in accordance with this subpart. Other subparts are directed to the manufacture, processing, distribution in commerce, and use of PCBs and may result in some cases in disposal at an earlier date than would otherwise occur.

§ 761.60 Disposal requirements.

(a) **PCBs.** (1) Except as provided in paragraphs (a) (2), (3), (4), and (5) of this section, PCBs at concentrations of 50 ppm or greater must be disposed of in an incinerator which complies with § 761.70.

(2) Mineral oil dielectric fluid from PCB-contaminated Electrical Equipment containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, must be disposed of in one of the following:

(i) In an incinerator that complies with § 761.70;

(ii) In a chemical waste landfill that complies with § 761.75 if information is provided to the owner or operator of the chemical waste landfill that shows that the mineral oil dielectric fluid does not exceed 500 ppm PCB and is not an ignitable waste as described in § 761.75(b) (8) (iii);

(iii) In a high efficiency boiler provided that:

(A) The boiler complies with the following criteria:

(1) The boiler is rated at a minimum of 50 million BTU hours;

(2) If the boiler uses natural gas or oil as the primary fuel, the carbon monoxide concentration in the stack is 50 ppm or less and the excess oxygen is at least three (3) percent when PCBs are being burned;

(3) If the boiler uses coal as the primary fuel, the carbon monoxide concentration in the stack is 100 ppm or less and the excess oxygen is at least three (3) percent when PCBs are being burned;

(4) The mineral oil dielectric fluid does not comprise more than ten (10) percent (on a volume basis) of the total fuel feed rate;

(5) The mineral oil dielectric fluid is not fed into the boiler unless the boiler is operating at its normal operating temperature (this prohibits feeding these fluids during either start up or shut down operations);

(6) The owner or operator of the boiler:

(i) Continuously monitors and records the carbon monoxide concentration and excess oxygen percentage in the stack gas while burning mineral oil dielectric fluid; or

(ii) If the boiler will burn less than 30,000 gallons of mineral oil dielectric fluid per year, measures and records the carbon monoxide concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 minutes while burning mineral oil dielectric fluid.

(7) The primary fuel feed rates, mineral oil dielectric fluid feed rates, and total quantities of both primary fuel and mineral oil dielectric fluid fed to the boiler are measured and recorded at regular intervals of no longer than 15 minutes while burning mineral oil dielectric fluid.

(8) The carbon monoxide concentration and the excess oxygen percentage are checked at least once every hour that mineral oil dielectric fluid is burned. If either measurement falls below the levels specified in this rule, the flow of mineral oil dielectric fluid to the boiler shall be stopped immediately.

(B) Thirty days before any person burns mineral oil dielectric fluid in the boiler, the person gives written notice to the EPA Regional Administrator for the EPA Region in which the boiler is located and that the notice contains the following information:

(1) The name and address of the owner or operator of the boiler and the address of the boiler;

(2) The boiler rating in units of BTU/hour;

(3) The carbon monoxide concentration and the excess oxygen percentage in the stack of the boiler when it is operated in a manner similar to the manner in which it will be operated when mineral oil dielectric fluid is burned; and

(4) The type of equipment, apparatus, and procedures to be used to con-

trol the feed of mineral oil dielectric fluid to the boiler and to monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack.

(C) When burning mineral oil dielectric fluid, the boiler must operate at a level of output no less than the output at which the measurements required under paragraph (b)(2)(iii)(B)(3) of this section were taken.

(D) Any person burning mineral oil dielectric fluid in a boiler obtains the following information and retains the information for five years at the boiler location:

(1) The data required to be collected under paragraphs (a)(2)(A) (6) and (7) of this section; and

(2) The quantity of mineral oil dielectric fluid burned in the boiler each month;

(iv) In a facility that is approved in accordance with § 761.60(e). For the purpose of burning mineral oil dielectric fluid, an applicant under § 761.60(e) must show that his combustion process destroys PCBs as efficiently as does a high efficiency boiler, as defined in paragraph (b)(2)(iii) of this section, or a § 761.70 approved incinerator.

(3) Liquids, other than mineral oil dielectric fluid, containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, shall be disposed of:

(i) In an incinerator which complies with § 761.70;

(ii) In a chemical waste landfill which complies with § 761.75 if information is provided to the owner or operator of the chemical waste landfill that shows that the waste does not exceed 500 ppm PCB and is not an ignitable waste as described in § 761.75(b)(8)(iii);

(iii) In a high efficiency boiler provided that.

(A) The boiler complies with the following criteria:

(1) The boiler is rated at a minimum of 50 million BTU/hour;

(2) If the boiler uses natural gas or oil as the primary fuel, the carbon monoxide concentration in the stack is 50 ppm or less and the excess oxygen is at least three (3) percent when PCBs are being burned;

(3) If the boiler uses coal as the primary fuel, the carbon monoxide concentration in the stack is 100 ppm or less and the excess oxygen is at least three (3) percent when PCBs are being burned;

(4) The waste does not comprise more than ten (10) percent (on a volume basis) of the total fuel feed rate;

(5) The waste is not fed into the boiler unless the boiler is operating at its normal operating temperature (this prohibits feeding these fluids during either start up or shut down operations);

(6) The owner or operator of the boiler must:

(i) Continuously monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack gas while burning waste fluid; or

(ii) If the boiler will burn less than 30,000 gallons of waste fluid per year, measure and record the carbon monoxide concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 minutes while burning waste fluid;

(7) The primary fuel feed rate, waste fluid feed rate, and total quantities of both primary fuel and waste fluid fed to the boiler must be measured and recorded at regular intervals of no longer than 15 minutes while burning waste fluid; and

(8) The carbon monoxide concentration and the excess oxygen percentage must be checked at least once every hour that the waste is burned. If either measurement falls below the levels specified in this rule, the flow of waste to the boiler shall be stopped immediately.

(B) Prior to any person burning these liquids in the boiler, approval must be obtained from the EPA Regional Administrator for the EPA Region in which the boiler is located and any persons seeking such approval must submit to the EPA Regional Administrator a request containing at least the following information:

(1) The name and address of the owner or operator of the boiler and the address of the boiler;

(2) The boiler rating in units of BTU/hour;

(3) The carbon monoxide concentration and the excess oxygen percentage in the stack of the boiler when it is operated in a manner similar to the manner in which it will be operated when low concentration PCB liquid is burned;

(4) The type of equipment, apparatus, and procedures to be used to control the feed of mineral oil dielectric fluid to the boiler and to monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack;

(5) The type of waste to be burned (e.g., hydraulic fluid, contaminated fuel oil, heat transfer fluid, etc.);

(6) The concentration of PCBs and of any other chlorinated hydrocarbon in the waste and the results of analyses using the American Society of Testing and Materials (ASTM) methods as follows: carbon and hydrogen content using ASTM D-3178-73 (reapproved 1979), nitrogen content using ASTM E-258-67, sulfur content using ASTM D-2784-80, D-1266-80, or D-129-64, chlorine content using ASTM D-808-81, water and sediment content using either ASTM D-2709-68 or D-1796-83, ash content using D-482-80, calorific value using ASTM D-240-76 (reapproved 1980), carbon residue using either ASTM D-2158-80 or D-524-81, and flash point using ASTM D-93-80.

(7) The quantity of wastes estimated to be burned in a thirty (30) day period;

(8) An explanation of the procedures to be followed to insure that burning the waste will not adversely affect the operation of the boiler such that combustion efficiency will decrease.

(C) On the basis of the information in paragraph (a)(3)(iii)(B) of this section and any other available information, the Regional Administrator may, at his discretion, find that the alternate disposal method will not present an unreasonable risk of injury to health or the environment and approve the use of the boiler;

(D) When burning PCB wastes, the boiler must operate at a level of output no less than the output at which the measurements required under paragraph (a)(3)(iii)(B)(3) of this section were taken; and

(E) Any person burning liquids in boilers approved as provided in paragraph (a)(3)(iii)(C) of this section, must obtain the following information and retain the information for five years at the boiler location:

(1) The data required to be collected in paragraphs (a)(3)(iii)(A) (6) and (7) of this section;

(2) The quantity of low concentration PCB liquid burned in the boiler each month.

(3) The analysis of the waste required by paragraph (a)(3)(iii)(B)(6) of this section taken once a month for each month during which low concentration PCB liquid is burned in the boiler.

(iv) In a facility that is approved in accordance with § 761.60(e). For the purpose of burning liquids, other than mineral oil dielectric fluid, containing 50 ppm or greater PCB, but less than 500 ppm PCB, an applicant under § 761.60(e) must show that his combustion process destroys PCBs as efficiently as does a high efficiency boiler, as defined in § 761.60(a)(2)(iii), or a § 761.70 incinerator.

(4) Any non-liquid PCBs at concentrations of 50 ppm or greater in the form of contaminated soil, rags, or other debris shall be disposed of:

(i) In an incinerator which complies with § 761.70; or

(ii) In a chemical waste landfill which complies with § 761.75.

NOTE: Except as provided in § 761.75(b)(3)(ii), liquid PCBs shall not be processed into non-liquid forms to circumvent the high temperature incineration requirements of § 761.60(a).

(5) All dredged materials and municipal sewage treatment sludges that contain PCBs at concentrations of 50 ppm or greater shall be disposed of:

(i) In an incinerator which complies with § 761.70,

(ii) In a chemical waste landfill which complies with § 761.65; or

(iii) Upon application, using a disposal method to be approved by the Agency's Regional Administrator in the EPA Region in which the PCBs are located. Applications for disposal in a manner other than prescribed in (i) or (ii) of this section must be made in writing to the Regional Administrator. The application must contain informa-

tion that, based on technical, environmental, and economic considerations, indicates that disposal in an incinerator or chemical waste landfill is not reasonable and appropriate, and that the alternate disposal method will provide adequate protection to health and the environment. The Regional Administrator may request other information that he or she believes to be necessary for evaluation of the alternate disposal method. Any approval by the Regional Administrator shall be in writing and may contain any appropriate limitations on the approved alternate method for disposal. In addition to these regulations, the Regional Administrator shall consider other applicable Agency guidelines, criteria, and regulations to ensure that the discharges of dredged material and sludges that contain PCBs and other contaminants are adequately controlled to protect the environment. The person to whom such approval is issued must comply with all limitations contained in the approval.

(6) When storage is desired prior to disposal, PCBs at concentrations of 50 ppm or greater shall be stored in a facility which complies with § 761.65.

(b) PCB Articles—(1) Transformers. (i) PCB Transformers shall be disposed of in accordance with either of the following:

(A) In an incinerator that complies with § 761.70; or

(B) In a chemical waste landfill which complies with § 761.75; *Provided*, That the transformer is first drained of all free flowing liquid, filled with solvent, allowed to stand for at least 18 hours, and then drained thoroughly. PCB liquids that are removed shall be disposed of in accordance with paragraph (a) of this section. Solvents may include kerosene, xylene, toluene and other solvents in which PCBs are readily soluble. Precautionary measures should be taken, however, that the solvent flushing procedure is conducted in accordance with applicable safety and health standards as required by Federal or State regulations.

(2) PCB Capacitors. (i) The disposal of any capacitor shall comply with all requirements of this subpart unless it is known from label or nameplate information, manufacturer's literature

(including documented communications with the manufacturer), or chemical analysis that the capacitor does not contain PCBs.

(ii) Any person may dispose of PCB Small Capacitors as municipal solid waste, unless that person is subject to the requirements of paragraph (b)(2)(iv) of this section.

(iii) Any PCB Large High or Low Voltage Capacitor which contains 500 ppm or greater PCBs, owned by any person, shall be disposed of in accordance with either of the following:

(A) Disposal in an incinerator that complies with § 761.70; or

(B) Until March 1, 1981, disposal in a chemical waste landfill that complies with § 761.75.

(iv) Any PCB Small Capacitor owned by any person who manufactures or at any time manufactured PCB Capacitors or PCB Equipment and acquired the PCB Capacitors in the course of such manufacturing shall be disposed of in accordance with either of the following:

(A) Disposal in an incinerator which complies with § 761.70; or

(B) Until March 1, 1981, disposal in a chemical waste landfill which complies with § 761.75.

(v) Notwithstanding the restrictions imposed by paragraph (b)(2)(iii)(B) or (b)(2)(iv)(B) of this section, PCB capacitors may be disposed of in PCB chemical waste landfills that comply with § 761.75 subsequent to March 1, 1981, if the Assistant Administrator for Pesticides and Toxic Substances publishes a notice in the FEDERAL REGISTER declaring that those landfills are available for such disposal and explaining the reasons for the extension or reopening. An extension or reopening for disposal of PCB capacitors that is granted under this subsection shall be subject to such terms and conditions as the Assistant Administrator may prescribe and shall be in effect for such period as the Assistant Administrator may prescribe. The Assistant Administrator may permit disposal of PCB capacitors in EPA approved chemical waste landfills after March 1, 1981, if in his opinion,

(A) Adequate incineration capability for PCB capacitors is not available, or

(B) The incineration of PCB capacitors will significantly interfere with the incineration of liquid PCBs, or

(C) There is other good cause shown.

As part of this evaluation, the Assistant Administrator will consider the impact of his action on the incentives to construct or expand PCB incinerators.

(vi) Prior to disposal in a § 761.75 chemical waste landfill, all large PCB capacitors, and all small PCB capacitors described in paragraph (b)(2)(iv) of this section, shall be placed in one of the Department of Transportation specification containers identified in § 761.65(c)(6) or in containers that comply with 49 CFR 178.118 (specification 17H containers). Large PCB capacitors which are too big to fit inside one of these containers shall be placed in a container with strength and durability equivalent to the DOT specification containers. In all cases, interstitial space in the container shall be filled with sufficient absorbent material (such as sawdust or soil) to absorb any liquid PCBs remaining in the capacitors.

(3) *PCB hydraulic machines.* PCB hydraulic machines containing PCBs at concentrations of 50 ppm or greater such as die casting machines may be disposed of as municipal solid waste or salvage provided that the machines are drained of all free-flowing liquid and the liquid is disposed of in accordance with the provisions of paragraph (a) of this section. If the PCB liquid contains 1000 ppm PCB or greater, then the hydraulic machine must be flushed prior to disposal with a solvent containing less than 50 ppm PCB under transformer solvents at paragraph (b)(1)(i)(B) of this section and the solvent disposed of in accordance with paragraph (a) of this section.

(4) *PCB-Contaminated Electrical Equipment.* All PCB-Contaminated Electrical Equipment except capacitors shall be disposed of by draining all free flowing liquid from the electrical equipment and disposing of the liquid in accordance with paragraph (a)(2) or (3) of this section. The disposal of the drained electrical equipment is not regulated by this rule. Capacitors that contain between 50 and 500

ppm PCBs shall be disposed of in an incinerator that complies with § 761.70 or in a chemical waste landfill that complies with § 761.75.

(5) *Other PCB Articles.* (i) PCB articles with concentrations at 50 ppm or greater must be disposed of:

(A) In an incinerator that complies with § 761.70; or

(B) In a chemical waste landfill that complies with § 761.75, provided that all free-flowing liquid PCBs have been thoroughly drained from any articles before the articles are placed in the chemical waste landfill and that the drained liquids are disposed of in an incinerator that complies with § 761.70.

(ii) PCB Articles with a PCB concentration between 50 and 500 ppm must be disposed of by draining all free flowing liquid from the article and disposing of the liquid in accordance with paragraph (a)(2) or (3) of this section. The disposal of the drained article is not regulated by this rule.

(6) *Storage of PCB Articles.* Except for a PCB Article described in paragraph (b)(2)(ii) of this section and hydraulic machines that comply with the municipal solid waste disposal provisions described in paragraph (b)(3) of this section, any PCB Article, with PCB concentrations at 50 ppm or greater, shall be stored in accordance with § 761.65 prior to disposal.

(c) *PCB Containers.* (1) Unless decontaminated in compliance with § 761.79 or as provided in paragraph (c)(2) of this section, a PCB container with PCB concentrations at 50 ppm or greater shall be disposed of:

(i) In an incinerator which complies with § 761.70, or

(ii) In a chemical waste landfill that complies with § 761.75; provided that if there are PCBs in a liquid state, the PCB Container shall first be drained and the PCB liquid disposed of in accordance with paragraph (a) of this section.

(2) Any PCB Container used to contain only PCBs at a concentration less than 500 ppm shall be disposed of as municipal solid wastes; provided that if the PCBs are in a liquid state, the PCB Container shall first be drained and the PCB liquid shall be disposed

of in accordance with paragraph (a) of this section.

(3) Prior to disposal, a PCB container with PCB concentrations at 50 ppm or greater shall be stored in a facility which complies with § 761.65.

(d) *Spills.* (1) Spills and other uncontrolled discharges of PCBs at concentrations of 50 ppm or greater constitute the disposal of PCBs.

(2) PCBs resulting from the clean-up and removal of spills, leaks, or other uncontrolled discharges, must be stored and disposed of in accordance with paragraph (a) of this section.

(3) These regulations do not exempt any person from any actions or liability under other statutory authorities, including but not limited to the Clean Water Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

(e) Any person who is required to incinerate any PCBs and PCB Items under this subpart and who can demonstrate that an alternative method of destroying PCBs and PCB Items exists and that this alternative method can achieve a level of performance equivalent to § 761.70 incinerators or high efficiency boilers as provided in paragraph (a)(2)(iv) and (a)(3)(iv) of this section, may submit a written request to either the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances for an exemption from the incineration requirements of § 761.70 or § 761.60. Requests for approval of alternate methods that will be operated in more than one region must be submitted to the Assistant Administrator for Pesticides and Toxic Substances except for research and development involving less than 500 pounds of PCB material (see paragraph (i)(2) of this section). Requests for approval of alternate methods that will be operated in only one region must be submitted to the appropriate Regional Administrator. The applicant must show that his method of destroying PCBs will not present an unreasonable risk of injury to health or the environment. On the basis of such information and any available information, the Regional Administrator or Assistant Administrator for Pesti-

cides and Toxic Substances may, in his discretion, approve the use of the alternate method if he finds that the alternate disposal method provides PCB destruction equivalent to disposal in a § 761.70 incinerator or a § 761.60 high efficiency boiler and will not present an unreasonable risk of injury to health or the environment. Any approval must be stated in writing and may contain such conditions and provisions as the Regional Administrator or Assistant Administrator for Pesticides and Toxic Substances deems appropriate. The person to whom such waiver is issued must comply with all limitations contained in such determination.

(f)(1) Each operator of a chemical waste landfill, incinerator, or alternative to incineration approved under paragraph (e) of this section shall give the following written notices to the state and local governments within whose jurisdiction the disposal facility is located:

(i) Notice at least thirty (30) days before a facility is first used for disposal of PCBs required by these regulations; and

(ii) At the request of any state or local government, annual notice of the quantities and general description of PCBs disposed of during the year. This annual notice shall be given no more than thirty (30) days after the end of the year covered.

(iii) The Regional Administrator may reduce the notice period required by paragraph (f)(1)(i) of this section from thirty days to a period of no less than five days in order to expedite interim approval of the chemical waste landfill located in Sedgwick County, Kansas.

(2) Any person who disposes of PCBs under a paragraph (a)(5)(iii) of this section incineration or chemical waste landfilling waiver shall give written notice at least thirty (30) days prior to conducting the disposal activities to the state and local governments within whose jurisdiction the disposal is to take place.

(g) *Testing procedures.* (1) Owners or users of mineral oil dielectric fluid electrical equipment may use the following procedures to determine the

concentration of PCBs in the dielectric fluid:

(i) Dielectric fluid removed from mineral oil dielectric fluid electrical equipment may be collected in a common container, provided that no other chemical substances or mixtures are added to the container. This common container option does not permit dilution of the collected oil. Mineral oil that is assumed or known to contain at least 50 ppm PCBs must not be mixed with mineral oil that is known or assumed to contain less than 50 ppm PCBs to reduce the concentration of PCBs in the common container. If dielectric fluid from untested, oil-filled circuit breakers, reclosers, or cable is collected in a common container with dielectric fluid from other oil-filled electrical equipment, the entire contents of the container must be treated as PCBs at a concentration of at least 50 ppm, unless all of the fluid from the other oil-filled electrical equipment has been tested and shown to contain less than 50 ppm PCBs.

(ii) For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common containers or the individual electrical equipment to determine the PCB concentration, except that if any PCBs at a concentration of 500 ppm or greater have been added to the container or equipment then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements of this subpart. For purposes of this subparagraph, representative samples of mineral oil dielectric fluid are either samples taken in accordance with American Society of Testing and Materials method D-923 or samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container.

(2) Owners or users of waste oil may use the following procedures to determine the PCB concentration of waste oil:

(i) Waste oil from more than one source may be collected in a common container, provided that no other

chemical substances or mixtures, such as non-waste oils, are added to the container.

(ii) For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common containers or the individual electrical equipment to determine the PCB concentration. *Except*, That if any PCBs at a concentration of 500 ppm or greater have been added to the container or equipment then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements of this Subpart. For purposes of this paragraph, representative samples of mineral oil dielectric fluid are either samples taken in accordance with American Society of Testing and Materials method D-923-81 or samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container.

(h) Requirements for export and import of PCBs for purposes of disposal and PCB Items for purposes of disposal are found in § 761.20.

(i) *Approval authority for disposal methods.* (1) The officials (the Assistant Administrator for Pesticides and Toxic Substances and the Regional Administrators) designated in §§ 761.60 (e) and 761.70 (a) and (b) to receive requests for approval of PCB disposal activities are the primary approval authorities for these activities. Notwithstanding, the Assistant Administrator for Pesticides and Toxic Substances may, at his/her discretion, assign the authority to review and approve any aspect of a disposal system to the Office of Pesticides and Toxic Substances or to a Regional Administrator.

(2) Except for activity authorized under § 761.30(j), research and development (R and D) into PCB disposal methods using a total of less than 500 pounds of PCB material (regardless of PCB concentration) will be reviewed and approved by the appropriate EPA Regional Administrator and research and development using 500 pounds or more of PCB material (regardless of

PCB concentration) will be reviewed by the approval authorities set out in §§ 761.60(e) and 761.70 (a) and (b).

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605))

[44 FR 31542, May 31, 1979, as amended at 44 FR 54297, Sept. 19, 1979; 45 FR 20475, Mar. 28, 1980, Redesignated at 47 FR 19527, May 6, 1982, and amended at 47 FR 37359, Aug. 25, 1982; 48 FR 5730, Feb. 8, 1983; 48 FR 13185, Mar. 30, 1983; 48 FR 15125, Apr. 7, 1983; 49 FR 28191, July 10, 1984; 49 FR 36648, Sept. 19, 1984]

§ 761.65 Storage for disposal.

This section applies to the storage for disposal of PCBs at concentrations of 50 ppm or greater and PCB Items with PCB concentrations of 50 ppm or greater.

(a) Any PCB Article or PCB Container stored for disposal before January 1, 1983, shall be removed from storage and disposed of as required by this part before January 1, 1984. Any PCB Article or PCB Container stored for disposal after January 1, 1983, shall be removed from storage and disposed of as required by Subpart D of this part within one year from the date when it was first placed into storage.

(b) Except as provided in paragraph (c) of this section, after July 1, 1978, owners or operators of any facilities used for the storage of PCBs and PCB Items designated for disposal shall comply with the following requirements:

(1) The facilities shall meet the following criteria:

(i) Adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB Items;

(ii) An adequate floor which has continuous curbing with a minimum six inch high curb. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB Article or PCB Container stored therein or 25 percent of the total internal volume of all PCB Articles or PCB Containers stored therein, whichever is greater;

(iii) No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area;

(iv) Floors and curbing constructed of continuous smooth and impervious materials, such as Portland cement concrete or steel, to prevent or minimize penetration of PCBs; and

(v) Not located at a site that is below the 100-year flood water elevation.

(c)(1) The following PCB Items may be stored temporarily in an area that does not comply with the requirements of paragraph (b) of this section for up to thirty days from the date of their removal from service, provided that a notation is attached to the PCB Item or a PCB Container (containing the item) indicating the date the item was removed from service:

(i) Non-leaking PCB Articles and PCB Equipment;

(ii) Leaking PCB Articles and PCB Equipment if the PCB Items are placed in a non-leaking PCB Container that contains sufficient sorbent materials to absorb any liquid PCBs remaining in the PCB Items;

(iii) PCB Containers containing non-liquid PCBs such as contaminated soil, rags, and debris; and

(iv) PCB Containers containing liquid PCBs at a concentration between 50 and 500 ppm, provided a Spill Prevention, Control and Countermeasure Plan has been prepared for the temporary storage area in accordance with 40 CFR Part 112. In addition, each container must bear a notation that indicates that the liquids in the drum do not exceed 500 ppm PCB.

(2) Non-leaking and structurally undamaged PCB Large High Voltage Capacitors and PCB-Contaminated Electrical Equipment that have not been drained of free flowing dielectric fluid may be stored on pallets next to a storage facility that meets the requirements of paragraph (b) of this section. PCB-Contaminated Electrical Equipment that has been drained of free flowing dielectric fluid is not subject to the storage provisions of § 761.65. Storage under this subparagraph will be permitted only when the storage facility has immediately available unfilled storage space equal to 10 percent of the volume of capacitors and equipment stored outside the facility. The capacitors and equipment temporarily stored outside the facility shall be checked for leaks weekly.

(3) Any storage area subject to the requirements of paragraph (b) or paragraph (c)(1) of this section shall be marked as required in Subpart C—§ 761.40(a)(10).

(4) No item of movable equipment that is used for handling PCBs and PCB Items in the storage facilities and that comes in direct contact with PCBs shall be removed from the storage facility area unless it has been decontaminated as specified in § 761.79.

(5) All PCB Articles and PCB Containers in storage shall be checked for leaks at least once every 30 days. Any leaking PCB Articles and PCB Containers and their contents shall be transferred immediately to properly marked non-leaking containers. Any spilled or leaked materials shall be immediately cleaned up, using sorbents or other adequate means, and the PCB-contaminated materials and residues shall be disposed of in accordance with § 761.60(a)(4).

(6) Except as provided in paragraph (c)(7) of this section, any container used for the storage of liquid PCBs shall comply with the Shipping Container Specification of the Department of Transportation (DOT), 49 CFR 178.80 (Specification 5 container without removable head), 178.82 (Specification 5B container without removable head), 178.102 (Specification 6D overpack with Specification 2S(§ 178.35) or 2SL(§ 178.35a) polyethylene containers) or 178.116 (Specification 17E container). Any container used for the storage of non-liquid PCBs shall comply with the specifications of 49 CFR 178.80 (Specification 5 container), 178.82 (Specification 5B container) or 178.115 (Specification 17C container). As an alternate, containers larger than those specified in DOT Specifications 5, 5B, or 17C may be used for non-liquid PCBs if the containers are designed and constructed in a manner that will provide as much protection against leaking and exposure to the environment as the DOT Specification containers, and are of the same relative strength and durability as the DOT Specification containers.

(7) Storage containers for liquid PCBs can be larger than the contain-

ers specified in paragraph (c)(6) of this section provided that:

(i) The containers are designed, constructed, and operated in compliance with Occupational Safety and Health Standards, 29 CFR 1910.106, *Flammable and combustible liquids*. Before using these containers for storing PCBs, the design of the containers must be reviewed to determine the effect on the structural safety of the containers that will result from placing liquids with the specific gravity of PCBs into the containers (see 29 CFR 1910.106(b)(1)(f)).

(ii) The owners or operators of any facility using containers described in paragraph (c)(7)(i) of this section shall prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan as described in Part 112 of this title. In complying with 40 CFR Part 112, the owner or operator shall read "oil(s)" as "PCB(s)" whenever it appears. The exemptions for storage capacity, 40 CFR 112.1(d)(2), and the amendment of SPCC plans by the Regional Administrator, 40 CFR 112.4, shall not apply unless some fraction of the liquids stored in the container are oils as defined by section 311 of the Clean Water Act.

(8) PCB Articles and PCB Containers shall be dated on the article or container when they are placed in storage. The storage shall be managed so that the PCB Articles and PCB Containers can be located by the date they entered storage. Storage containers provided in paragraph (c)(7) of this section shall have a record that includes for each batch of PCBs the quantity of the batch and date the batch was added to the container. The record shall also include the date, quantity, and disposition of any batch of PCBs removed from the container.

(9) Owners or operators of storage facilities shall establish and maintain records as provided in § 761.80.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at 47 FR 37359, Aug. 8, 1982; 49 FR 28191, July 10, 1984]

§ 761.70 Incineration.

This section applies to facilities used to incinerate PCBs required to be incinerated by this part.

(a) *Liquid PCBs*. An incinerator used for incinerating PCBs shall be approved by an EPA Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances pursuant to paragraph (d) of this section. Requests for approval of incinerators to be used in more than one region must be submitted to the Assistant Administrator for Pesticides and Toxic Substances, except for research and development involving less than 500 pounds of PCB material (see § 761.60(i)(2)). Requests for approval of incinerators to be used in only one region must be submitted to the appropriate Regional Administrator. The incinerator shall meet all of the requirements specified in paragraph (a) (1) through (9) of this section, unless a waiver from these requirements is obtained pursuant to paragraph (d)(5) of this section. In addition, the incinerator shall meet any other requirements which may be prescribed pursuant to paragraph (d)(4) of this section.

(1) Combustion criteria shall be either of the following:

(i) Maintenance of the introduced liquids for a 2-second dwell time at 1200°C(±100°C) and 3 percent excess oxygen in the stack gas; or

(ii) Maintenance of the introduced liquids for a 1½ second dwell time at 1600°C(±100°C) and 2 percent excess oxygen in the stack gas.

(2) Combustion efficiency shall be at least 99.9 percent computed as follows:

$$\text{Combustion efficiency} = \frac{\text{Cco}_2}{\text{Cco}_2 + \text{Cco}} \times 100$$

where

Cco₂ = Concentration of carbon dioxide.
Cco = Concentration of carbon monoxide.

(3) The rate and quantity of PCBs which are fed to the combustion system shall be measured and recorded at regular intervals of no longer than 15 minutes.

(4) The temperatures of the incineration process shall be continuously measured and recorded. The combustion temperature of the incineration process shall be based on either direct

(pyrometer) or indirect (wall thermocouple-pyrometer correlation) temperature readings.

(5) The flow of PCBs to the incinerator shall stop automatically whenever the combustion temperature drops below the temperatures specified in paragraph (a)(1) of this section.

(6) Monitoring of stack emission products shall be conducted:

(i) When an incinerator is first used for the disposal of PCBs under the provisions of this regulation;

(ii) When an incinerator is first used for the disposal of PCBs after the incinerator has been modified in a manner which may affect the characteristics of the stack emission products; and

(iii) At a minimum such monitoring shall be conducted for the following parameters: (a) O₂; (b) CO; (c) CO₂; (d) Oxides of Nitrogen (NO_x); (e) Hydrochloric Acid (HCl); (f) Total Chlorinated Organic Content (RCI); (g) PCBs; and (h) Total Particulate Matter.

(7) At a minimum monitoring and recording of combustion products and incineration operations shall be conducted for the following parameters whenever the incinerator is incinerating PCBs: (i) O₂; (ii) CO; and (iii) CO₂. The monitoring for O₂ and CO shall be continuous. The monitoring for CO₂ shall be periodic, at a frequency specified by the Regional Administrator or Assistant Administrator for Pesticides and Toxic Substances.

(8) The flow of PCBs to the incinerator shall stop automatically when any one or more of the following conditions occur, unless a contingency plan is submitted by the incinerator owner or operator and approved by the Regional Administrator or Assistant Administrator for Pesticides and Toxic Substances. The contingency plan indicates what alternative measures the incinerator owner or operator would take if any of the following conditions occur:

(i) Failure of monitoring operations specified in paragraph (a)(7) of this section;

(ii) Failure of the PCB rate and quantity measuring and recording equipment specified in paragraph (a)(3) of this section; or

(iii) Excess oxygen falls below the percentage specified in paragraph (a)(1) of this section.

(9) Water scrubbers shall be used for HCl control during PCB incineration and shall meet any performance requirements specified by the appropriate EPA Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances. Scrubber effluent shall be monitored and shall comply with applicable effluent or pretreatment standards, and any other State and Federal laws and regulations. An alternate method of HCl control may be used if the alternate method has been approved by the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances. (The HCl neutralizing capability of cement kilns is considered to be an alternate method.)

(b) *Nonliquid PCBs.* An incinerator used for incinerating nonliquid PCBs, PCB Articles, PCB Equipment, or PCB Containers shall be approved by the appropriate EPA Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances pursuant to paragraph (d) of this section. Requests for approval of incinerators to be used in more than one region must be submitted to the Assistant Administrator for Pesticides and Toxic Substances, except for research and development involving less than 500 pounds of PCB material (see § 761.60(i)(2)). Requests for approval of incinerators to be used in only one region must be submitted to the appropriate Regional Administrator. The incinerator shall meet all of the requirements specified in paragraphs (b)(1) and (2) of this section unless a waiver from these requirements is obtained pursuant to paragraph (d)(5) of this section. In addition, the incinerator shall meet any other requirements that may be prescribed pursuant to paragraph (d)(4) of this section.

(1) The mass air emissions from the incinerator shall be no greater than 0.001g PCB/kg of the PCB introduced into the incinerator.

(2) The incinerator shall comply with the provisions of paragraphs (a)(2), (3), (4), (6), (7), (8)(i) and (ii), and (9) of this section.

(c) *Maintenance of data and records.* All data and records required by this section shall be maintained in accordance with § 761.80, Records and monitoring.

(d) *Approval of incinerators.* Prior to the incineration of PCBs and PCB Items the owner or operator of an incinerator shall receive the written approval of the Agency Regional Administrator for the region in which the incinerator is located, or the Assistant Administrator for Pesticides and Toxic Substances. Approval from the Assistant Administrator for Pesticides and Toxic Substances may be effective in all ten EPA regions. Such approval shall be obtained in the following manner:

(1) *Application.* The owner or operator shall submit to the Regional Administrator or the Assistant Administrator an application which contains:

(i) The location of the incinerator;

(ii) A detailed description of the incinerator including general site plans and design drawings of the incinerator;

(iii) Engineering reports or other information on the anticipated performance of the incinerator;

(iv) Sampling and monitoring equipment and facilities available;

(v) Waste volumes expected to be incinerated;

(vi) Any local, State, or Federal permits or approvals; and

(vii) Schedules and plans for complying with the approval requirements of this regulation.

(2) *Trial burn.* (i) Following receipt of the application described in paragraph (d)(1) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances shall determine if a trial burn is required and notify the person who submitted the report whether a trial burn of PCBs and PCB Items must be conducted. The Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may require the submission of any other information that the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances finds to be reasonably necessary to determine the need for a trial burn. Such other information

shall be restricted to the types of information required in paragraphs (d)(1) (i) through (vii) of this section.

(ii) If the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances determines that a trial burn must be held, the person who submitted the report described in paragraph (d)(1) of this section shall submit to the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances a detailed plan for conducting and monitoring the trial burn. At a minimum, the plan must include:

(A) Date trial burn is to be conducted;

(B) Quantity and type of PCBs and PCB Items to be incinerated;

(C) Parameters to be monitored and location of sampling points;

(D) Sampling frequency and methods and schedules for sample analyses; and

(E) Name, address, and qualifications of persons who will review analytical results and other pertinent data, and who will perform a technical evaluation of the effectiveness of the trial burn.

(iii) Following receipt of the plan described in paragraph (d)(2)(ii) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances will approve the plan, require additions or modifications to the plan, or disapprove the plan. If the plan is disapproved, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances will notify the person who submitted the plan of such disapproval, together with the reasons why it is disapproved. That person may thereafter submit a new plan in accordance with paragraph (d)(2)(ii) of this section. If the plan is approved (with any additions or modifications which the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may prescribe), the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances will notify the person who submitted the plan of the approval. Thereafter, the trial burn shall take place at a date and time to be agreed upon between the Regional Administrator or

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the Assistant Administrator for Pesticides and Toxic Substances and the person who submitted the plan.

(3) *Other information.* In addition to the information contained in the report and plan described in paragraphs (d) (1) and (2) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may require the owner or operator to submit any other information that the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances finds to be reasonably necessary to determine whether an incinerator shall be approved.

NOTE: The Regional Administrator will have available for review and inspection an Agency manual containing information on sampling methods and analytical procedures for the parameters required in § 761.70(a) (3), (4), (6), and (7) plus any other parameters he/she may determine to be appropriate. Owners or operators are encouraged to review this manual prior to submitting any report required in § 761.70.

(4) *Contents of approval.* (i) Except as provided in paragraph (d)(5) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may not approve an incinerator for the disposal of PCBs and PCB Items unless he finds that the incinerator meets all of the requirements of paragraphs (a) and/or (b) of this section.

(ii) In addition to the requirements of paragraphs (a) and/or (b) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may include in an approval any other requirements that the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances finds are necessary to ensure that operation of the incinerator does not present an unreasonable risk of injury to health or the environment from PCBs. Such requirements may include a fixed period of time for which the approval is valid.

(5) *Waivers.* An owner or operator of the incinerator may submit evidence to the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances that operation of the incinerator will not present an

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unreasonable risk of injury to health or the environment from PCBs, when one or more of the requirements of paragraphs (a) and/or (b) of this section are not met. On the basis of such evidence and any other available information, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may in his/her discretion find that any requirement of paragraphs (a) and (b) of this section is not necessary to protect against such a risk, and may waive the requirements in any approval for that incinerator. Any finding and waiver under this paragraph must be stated in writing and included as part of the approval.

(6) *Persons approved.* An approval will designate the persons who own and who are authorized to operate the incinerator, and will apply only to such persons, except as provided in paragraph (d)(8) of this section.

(7) *Final approval.* Approval of an incinerator will be in writing and signed by the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances. The approval will state all requirements applicable to the approved incinerator.

(8) *Transfer of property.* Any person who owns or operates an approved incinerator must notify EPA at least 30 days before transferring ownership in the incinerator or the property it stands upon, or transferring the right to operate the incinerator. The transferor must also submit to EPA, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the transferee will abide by the transferor's EPA incinerator approval. Within 30 days of receiving such notification and affidavit, EPA will issue an amended approval substituting the transferee's name for the transferor's name, or EPA may require the transferee to apply for a new incinerator approval. In the latter case, the transferee must abide by the transferor's EPA approval until EPA issues the new approval to the transferee.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at

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48 FR 13185, Mar. 30, 1983; 49 FR 28191, July 10, 1984]

§ 761.75 Chemical waste landfills.

This section applies to facilities used to dispose of PCBs in accordance with the part.

(a) *General.* A chemical waste landfill used for the disposal of PCBs and PCB Items shall be approved by the Agency Regional Administrator pursuant to paragraph (c) of this section. The landfill shall meet all of the requirements specified in paragraph (b) of this section, unless a waiver from these requirements is obtained pursuant to paragraph (c)(4) of this section. In addition, the landfill shall meet any other requirements that may be prescribed pursuant to paragraph (c)(3) of this section.

(b) *Technical requirements.* Requirements for chemical waste landfills used for the disposal of PCBs and PCB Items are as follows:

(1) *Soils.* The landfill site shall be located in thick, relatively impermeable formations such as large-area clay pans. Where this is not possible, the soil shall have a high clay and silt content with the following parameters:

(i) In-place soil thickness, 4 feet or compacted soil liner thickness, 3 feet;

(ii) Permeability (cm/sec), equal to or less than 1×10^{-7} ;

(iii) Percent soil passing No. 200 Sieve, >30;

(iv) Liquid Limit, >30; and

(v) Plasticity Index >15.

(2) *Synthetic membrane liners.* Synthetic membrane liners shall be used when, in the judgment of the Regional Administrator, the hydrologic or geologic conditions at the landfill require such a liner in order to provide at least a permeability equivalent to the soils in paragraph (b)(1) of this section. Whenever a synthetic liner is used at a landfill site, special precautions shall be taken to insure that its integrity is maintained and that it is chemically compatible with PCBs. Adequate soil underlining and soil cover shall be provided to prevent excessive stress on the liner and to prevent rupture of the liner. The liner must have a minimum thickness of 30 mils.

(3) *Hydrologic conditions.* The bottom of the landfill shall be above

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the historical high groundwater table as provided below. Floodplains, shorelands, and groundwater recharge areas shall be avoided. There shall be no hydraulic connection between the site and standing or flowing surface water. The site shall have monitoring wells and leachate collection. The bottom of the landfill liner system or natural in-place soil barrier shall be at least fifty feet from the historical high water table.

(4) *Flood protection.* (i) If the landfill site is below the 100-year floodwater elevation, the operator shall provide surface water diversion dikes around the perimeter of the landfill site with a minimum height equal to two feet above the 100-year floodwater elevation.

(ii) If the landfill site is above the 100-year floodwater elevation, the operators shall provide diversion structures capable of diverting all of the surface water runoff from a 24-hour, 25-year storm.

(5) *Topography.* The landfill site shall be located in an area of low to moderate relief to minimize erosion and to help prevent landslides or slumping.

(6) *Monitoring systems—(i) Water sampling.* (A) For all sites receiving PCBs, the ground and surface water from the disposal site area shall be sampled prior to commencing operations under an approval provided in paragraph (c) of this section for use as baseline data.

(B) Any surface watercourse designated by the Regional Administrator using the authority provided in paragraph (c)(3)(ii) of this section shall be sampled at least monthly when the landfill is being used for disposal operations.

(C) Any surface watercourse designated by the Regional Administrator using the authority provided in paragraph (c)(3)(ii) of this section shall be sampled for a time period specified by the Regional Administrator on a frequency of no less than once every six months after final closure of the disposal area.

(ii) *Groundwater monitor wells.* (A) If underlying earth materials are homogenous, impermeable, and uniformly sloping in one direction, only three

sampling points shall be necessary. These three points shall be equally spaced on a line through the center of the disposal area and extending from the area of highest water table elevation to the area of the lowest water table elevation on the property.

(B) All monitor wells shall be cased and the annular space between the monitor zone (zone of saturation) and the surface shall be completely back-filled with Portland cement or an equivalent material and plugged with Portland cement to effectively prevent percolation of surface water into the well bore. The well opening at the surface shall have a removable cap to provide access and to prevent entrance of rainfall or stormwater runoff. The well shall be pumped to remove the volume of liquid initially contained in the well before obtaining a sample for analysis. The discharge shall be treated to meet applicable State or Federal discharge standards or recycled to the chemical waste landfill.

(iii) *Water analysis.* As a minimum, all samples shall be analyzed for the following parameters, and all data and records of the sampling and analysis shall be maintained as required in § 761.80(d)(1). Sampling methods and analytical procedures for these parameters shall comply with those specified in 40 CFR Part 136 as amended in 41 FR 52779 on December 1, 1976.

(A) PCBs.

(B) pH.

(C) Specific conductance.

(D) Chlorinated organics.

(7) *Leachate collection.* A leachate collection monitoring system shall be installed above the chemical waste landfill. Leachate collection systems shall be monitored monthly for quantity and physicochemical characteristics of leachate produced. The leachate should be either treated to acceptable limits for discharge in accordance with a State or Federal permit or disposed of by another State or Federally approved method. Water analysis shall be conducted as provided in paragraph (b)(6)(iii) of this section. Acceptable leachate monitoring/collection systems shall be any of the following designs, unless a waiver is obtained pursuant to paragraph (c)(4) of this section.

(i) *Simple leachate collection.* This system consists of a gravity flow drainfield installed above the waste disposal facility liner. This design is recommended for use when semi-solid or leachable solid wastes are placed in a lined pit excavated into a relatively thick, unsaturated, homogenous layer of low permeability soil.

(ii) *Compound leachate collection.* This system consists of a gravity flow drainfield installed above the waste disposal facility liner and above a secondary installed liner. This design is recommended for use when semi-liquid or leachable solid wastes are placed in a lined pit excavated into relatively permeable soil.

(iii) *Suction lysimeters.* This system consists of a network of porous ceramic cups connected by hoses/tubing to a vacuum pump. The porous ceramic cups or suction lysimeters are installed along the sides and under the bottom of the waste disposal facility liner. This type of system works best when installed in a relatively permeable unsaturated soil immediately adjacent to the bottom and/or sides of the disposal facility.

(8) *Chemical waste landfill operations.* (i) PCBs and PCB Items shall be placed in a landfill in a manner that will prevent damage to containers or articles. Other wastes placed in the landfill that are not chemically compatible with PCBs and PCB Items including organic solvents shall be segregated from the PCBs throughout the waste handling and disposal process.

(ii) An operation plan shall be developed and submitted to the Regional Administrator for approval as required in paragraph (c) of this section. This plan shall include detailed explanations of the procedures to be used for recordkeeping, surface water handling procedures, excavation and backfilling, waste segregation burial coordinates, vehicle and equipment movement, use of roadways, leachate collection systems, sampling and monitoring procedures, monitoring wells, environmental emergency contingency plans, and security measures to protect against vandalism and unauthorized waste placements. EPA guidelines entitled "Thermal Processing and Land Disposal of Solid Waste" (39 FR 29337, Aug.

14, 1974) are a useful reference in preparation of this plan. If the facility is to be used to dispose of liquid wastes containing between 50 ppm and 500 ppm PCB, the operations plan must include procedures to determine that liquid PCBs to be disposed of at the landfill do not exceed 500 ppm PCB and measures to prevent the migration of PCBs from the landfill. Bulk liquids not exceeding 500 ppm PCBs may be disposed of provided such waste is pretreated and/or stabilized (e.g., chemically fixed, evaporated, mixed with dry inert absorbant) to reduce its liquid content or increase its solid content so that a non-flowing consistency is achieved to eliminate the presence of free liquids prior to final disposal in a landfill. PCB Container of liquid PCBs with a concentration between 50 and 500 ppm PCB may be disposed of if each container is surrounded by an amount of inert sorbant material capable of absorbing all of the liquid contents of the container.

(iii) *Ignitable wastes* shall not be disposed of in chemical waste landfills. Liquid ignitable wastes are wastes that have a flash point less than 60 degrees C (140 degrees F) as determined by the following method or an equivalent method: Flash point of liquids shall be determined by a Pensky-Martens Closed Cup Tester, using the protocol specified in ASTM Standard D-93-80, or the Setaflash Closed Tester using the protocol specified in ASTM Standard D-3278-78.

(iv) Records shall be maintained for all PCB disposal operations and shall include information on the PCB concentration in liquid wastes and the three dimensional burial coordinates for PCBs and PCB Items. Additional records shall be developed and maintained as required in § 761.80.

(9) *Supporting facilities.* (i) A six foot woven mesh fence, wall, or similar device shall be placed around the site to prevent unauthorized persons and animals from entering.

(ii) Roads shall be maintained to and within the site which are adequate to support the operation and maintenance of the site without causing safety or nuisance problems or hazardous conditions.

(iii) The site shall be operated and maintained in a manner to prevent safety problems or hazardous conditions resulting from spilled liquids and windblown materials.

(c) *Approval of chemical waste landfills.* Prior to the disposal of any PCBs and PCB Items in a chemical waste landfill, the owner or operator of the landfill shall receive written approval of the Agency Regional Administrator for the Region in which the landfill is located. The approval shall be obtained in the following manner:

(1) *Initial report.* The owner or operator shall submit to the Regional Administrator an initial report which contains:

- (i) The location of the landfill;
- (ii) A detailed description of the landfill including general site plans and design drawings;
- (iii) An engineering report describing the manner in which the landfill complies with the requirements for chemical waste landfills specified in paragraph (b) of this section;
- (iv) Sampling and monitoring equipment and facilities available;
- (v) Expected waste volumes of PCBs;
- (vi) General description of waste materials other than PCBs that are expected to be disposed of in the landfill;
- (vii) Landfill operations plan as required in paragraph (b) of this section;
- (viii) Any local, State, or Federal permits or approvals; and
- (ix) Any schedules or plans for complying with the approval requirements of these regulations.

(2) *Other information.* In addition to the information contained in the report described in paragraph (c)(1) of this section, the Regional Administrator may require the owner or operator to submit any other information that the Regional Administrator finds to be reasonably necessary to determine whether a chemical waste landfill should be approved. Such other information shall be restricted to the types of information required in paragraphs (c)(1) (i) through (ix) of this section.

(3) *Contents of approval.* (i) Except as provided in paragraph (c)(4) of this section the Regional Administrator may not approve a chemical waste landfill for the disposal of PCBs and PCB Items, unless he finds that the

landfill meets all of the requirements of paragraph (b) of this section.

(ii) In addition to the requirements of paragraph (b) of this section, the Regional Administrator may include in an approval any other requirements or provisions that the Regional Administrator finds are necessary to ensure that operation of the chemical waste landfill does not present an unreasonable risk of injury to health or the environment from PCBs. Such provisions may include a fixed period of time for which the approval is valid.

The approval may also include a stipulation that the operator of the chemical waste landfill report to the Regional Administrator any instance when PCBs are detectable during monitoring activities conducted pursuant to paragraph (b)(6) of this section.

(4) *Waivers.* An owner or operator of a chemical waste landfill may submit evidence to the Regional Administrator that operation of the landfill will not present an unreasonable risk of injury to health or the environment from PCBs when one or more of the requirements of paragraph (b) of this section are not met. On the basis of such evidence and any other available information, the Regional Administrator may in his discretion find that one or more of the requirements of paragraph (b) of this section is not necessary to protect against such a risk and may waive the requirements in any approval for that landfill. Any finding and waiver under this paragraph will be stated in writing and included as part of the approval.

(5) *Persons approved.* Any approval will designate the persons who own and who are authorized to operate the chemical waste landfill, and will apply only to such persons, except as provided by paragraph (c)(7) of this section.

(6) *Final approval.* Approval of a chemical waste landfill will be in writing and will be signed by the Regional Administrator. The approval will state all requirements applicable to the approved landfill.

(7) *Transfer of property.* Any person who owns or operates an approved chemical waste landfill must notify EPA at least 30 days before transferring ownership in the property or transferring the right to conduct the

chemical waste landfill operation. The transferor must also submit to EPA, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the transferee will abide by the transferor's EPA chemical waste landfill approval. Within 30 days of receiving such notification and affidavit, EPA will issue an amended approval substituting the transferee's name for the transferor's name, or EPA may require the transferee to apply for a new chemical waste landfill approval. In the latter case, the transferee must abide by the transferor's EPA approval until EPA issues the new approval to the transferee.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at 48 FR 5730, Feb. 8, 1983; 49 FR 28191, July 10, 1984]

§ 761.79 Decontamination.

(a) Any PCB Container to be decontaminated shall be decontaminated by flushing the internal surfaces of the container three times with a solvent containing less than 50 ppm PCB. The solubility of PCBs in the solvent must be five percent or more by weight. Each rinse shall use a volume of the normal diluent equal to approximately ten (10) percent of the PCB Container capacity. The solvent may be reused for decontamination until it contains 50 ppm PCB. The solvent shall then be disposed of as a PCB in accordance with § 761.60(a). Non-liquid PCBs resulting from the decontamination procedures shall be disposed of in accordance with the provisions of § 761.60(a)(4).

(b) Movable equipment used in storage areas shall be decontaminated by swabbing surfaces that have contacted PCBs with a solvent meeting the criteria of paragraph (a) of this section.

NOTE: Precautionary measures should be taken to ensure that the solvent meets safety and health standards as required by applicable Federal regulations.

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982]

Environmental Protection Agency

Subpart E—Exemptions

§ 761.80 Manufacturing, processing, and distribution in commerce exemptions.

(a) The Administrator grants the following petitioners an exemption for one year to distribute in commerce PCB small capacitors for purposes of repair:

(1) Advance Transformer Co., Chicago, IL 60618 (PDE-4).

(2) Air Conditioning Contractors of America, Washington, DC 20036 (PDE-7).

(3) Association of Home Appliance Manufacturers, Chicago, IL 60606 (PDE-26.2).

(4) B & B Motor & Control Corp., New York, NY 10012 (PDE-30).

(5) Complete-Reading Electric Co., Hillside, IL 60162 (PDE-48).

(6) Dunham-Bush, Inc., Harrisonburg, VA 22801 (PDE-71).

(7) Emerson Quiet Kool Corp., Woodbridge, NJ 07095 (PDE-84).

(8) Harry Alter Co., Chicago, IL 60609 (PDE-111).

(9) Minnesota Mining and Manufacturing Co., St. Paul, MN 55133 (PDE-157.1).

(10) Motors & Armatures, Inc., Hauppauge, NY 11788 (PDE-161).

(11) National Association of Electrical Distributors, Stamford, CT 06901 (PDE-163).

(12) National Capacitor Corp., Garden Grove, CA 92641 (PDE-165).

(13) Service Supply Co., Phoenix, AZ 85013 (PDE-237).

(14) Wedzeb Enterprises, Inc., Lebanon, IN 46052 (PDE-297).

(15) Westinghouse Electric Corp., Pittsburgh, PA 15222 (PDE-298).

(b) The Administrator grants the following petitioners an exemption for one year to distribute in commerce PCB equipment containing PCB small capacitors:

(1) Advance Transformer Co., Chicago, IL 60618 (PDE-4).

(2) Coleman Co., Inc., Wichita, KS 67201 (PDE-45.1).

(3) Donn Corp., Westlake, OH 44145 (PDE-63).

(4) Dunham-Bush, Inc., Harrisonburg, VA 22801 (PDE-71).

(5) Emerson Quiet Kool Corp., Woodbridge, NJ 07095 (PDE-84).

(6) Friedrich Air Conditioning & Refrigeration Co., San Antonio, TX 78295 (PDE-93).

(7) Gould, Inc., Electric Motor Division, St. Louis, MO 63166 (PDE-103).

(8) GTE Products Corp., Danvers, MA 01923 (PDE-105).

(9) King-Seeley Thermos Co., Queen Products Division, Albert Lea, MN 56007 (PDE-139).

(10) L.E. Mason Co., Red Dot Division, Boston, MA 02136 (PDE-223).

(11) Minnesota Mining and Manufacturing Co., St. Paul, MN 55133 (PDE-157.3).

(12) National Association of Electrical Distributors, Stamford, CT 06901 (PDE-163).

(13) Royalite Co., Flint, MI 48502 (PDE-231).

(14) Sola Electric, Unit of General Signal, Elk Grove Village, IL 60007 (PDE-246).

(15) Transco, Inc., West Columbia, SC 29169 (PDE-276.1).

(16) Westinghouse Electric Corp., Pittsburgh, PA 15222 (PDE-298).

(c) The Administrator grants the following petitioners an exemption for one year to process PCB small capacitors and PCB equipment containing PCB small capacitors into other equipment and to distribute in commerce that equipment:

(1) Advance Transformer Co., Chicago, IL 60618 (PDE-4).

(2) Gould, Inc., Electric Motor Division, St. Louis, MO 63166 (PDE-103).

(3) GTE Products Corp., Danvers, MA 01923 (PDE-105).

(4) L.E. Mason Co., Red Dot Division, Boston, MA 02136 (PDE-223).

(5) Westinghouse Electric Corp., Pittsburgh, PA 15222 (PDE-298).

(d) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce PCB-contaminated fluid for purposes of servicing customers' transformers:

(1) Electrical Apparatus Service Association, St. Louis, MO 63132 (PDE-77), except for Ward Transformer Co., Inc.

(2) Ohio Transformer Corp., Louisville, OH 44641 (PDE-173).

(3) T & R Electric Supply Co., Inc., Colman, SD 57017 (PDE-265).

(4) Temco, Inc., Corpus Christi, TX 78410 (PDE-268).

(e) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce PCB-contaminated fluid in buying and selling used PCB-contaminated transformers:

(1) Electrical Apparatus Service Association, St. Louis, MO 63132 (PDE-77), except for Ward Transformer Co., Inc.

(2) Ohio Transformer Corp., Louisville, OH 44641 (PDE-173).

(3) Temco, Inc., Corpus Christi, TX 78410 (PDE-268).

(f) The Administrator grants the following petitioners an exemption for one year to manufacture small quantities of PCBs for research and development:

(1) California Bionuclear Corp., Sun Valley, CA 91352 (ME-13).

(2) Foxboro Co., North Haven, CT 06473 (ME-6).

(3) ULTRA Scientific, Inc., Hope, RI 02831 (ME-99.1).

(g) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce small quantities of PCBs for research and development:

(1) California Bionuclear Corp., Sun Valley, CA 91352 (PDE-38.1).

(2) Chem Service, Inc., West Chester, PA 19380 (PDE-41).

(3) Foxboro Co., North Haven, CT 06473 (PDE-21.1).

(4) PolyScience Corp., Niles, IL 60648 (PDE-178).

(5) ULTRA Scientific, Inc., Hope, RI 02831 (PDE-282.1).

(h) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce PCBs for use as a mounting medium in microscopy for all purposes:

(1) McCrone Accessories & Components, Division of Walter C. McCrone Associates, Inc., Chicago, IL 60616 (PDE-149).

(2) R.P. Cargille Laboratories, Inc., Cedar Grove, NJ 07009 (PDE-181), provided that petitioner stores the PCBs it processes and distributes in commerce in accordance with the storage for disposal requirements of 40 CFR 761.65(b).

(i) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce PCBs for use as an immersion oil in low fluorescence microscopy (other than capillary microscopy):

(1) R.P. Cargille Laboratories, Inc., Cedar Grove, NJ 07009 (PDE-181), provided that petitioner stores the PCBs it processes and distributes in commerce in accordance with the storage for disposal requirements of 40 CFR 761.65(b).

(j) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce small quantities of PCBs for use as an optical liquid:

(1) R.P. Cargille Laboratories, Inc., Cedar Grove, NJ 07009 (PDE-181), provided that petitioner stores the PCBs it processes and distributes in commerce in accordance with the storage for disposal requirements of 40 CFR 761.65(b).

(k) The Administrator grants the following petitioners an exemption for one year to distribute in commerce previously imported and repaired PCB equipment containing PCB small capacitors:

(1) Honeywell, Inc., Waltham, MA 02154 (PDE-119).

(l) The Administrator grants the following petitioners an exemption for one year to import samples of PCB-containing fluid taken from PCB transformers for purposes of testing and analysis:

(1) Dow Corning Corp., Midland, MI 48460 (ME-31.1).

(m) The Administrator grants the following petitioners an exemption for one year to process and export small quantities of PCBs for research and development:

(1) Chem Service, Inc., West Chester, PA 19380 (PDE-41).

(2) Foxboro Co., North Haven, CT 06473 (PDE-21.1).

(3) PolyScience Corp., Niles, IL 60648 (PDE-178).

(4) ULTRA Scientific, Inc., Hope, RI 02831 (PDE-282.1).

(n) The one-year exemption granted to petitioners in paragraphs (f), (g), (l) and (m) of this section shall be renewed automatically unless a petitioner notifies EPA of any increase in the

amount of PCBs to be manufactured, imported, processed, distributed in commerce, or exported or any change in the manner of manufacture, processing, distribution in commerce, or export of PCBs. EPA will consider the submission of such information to be a renewed petition for exemption. EPA will evaluate the information in the renewed exemption petition, publish a proposed rule for public comments, and issue a final rule either granting or denying the exemption. Until EPA acts on the renewed exemption petition, the petitioner will be allowed to continue the activities for which it requests exemption.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)
[49 FR 28171, July 10, 1984]

Subparts F-I—[Reserved]

Subpart J—Records and Reports

§ 761.180 Records and monitoring.

This section contains recordkeeping and reporting requirements that apply to PCBs, PCB Items, and PCB storage and disposal facilities that are subject to the requirements of the part.

(a) *PCBs and PCB Items in service or projected for disposal.* Beginning July 2, 1978, each owner or operator of a facility using or storing at one time at least 45 kilograms (99.4 pounds) of PCBs contained in PCB Container(s) or one or more PCB Transformers, or 50 or more PCB Large High or Low Voltage Capacitors shall develop and maintain records on the disposition of PCBs and PCB Items. These records shall form the basis of an annual document prepared for each facility by July 1 covering the previous calendar year. Owners or operators with one or more facilities that use or store PCBs and PCB Items in the quantities described above may maintain the records and documents at one of the facilities that is normally occupied for 8 hours a day, provided the identity of this facility is available at each facility using or storing PCBs and PCB Items. The records and documents shall be maintained for at least five years after the facility ceases using or storing PCBs and PCB Items in the prescribed

quantities. The following information for each facility shall be included in the annual document:

(1) The dates when PCBs and PCB Items are removed from service, are placed into storage for disposal, and are placed into transport for disposal. The quantities of the PCBs and PCB Items shall be indicated using the following breakdown:

(i) Total weight in kilograms of any PCBs and PCB Items in PCB Containers including the identification of container contents such as liquids and capacitors;

(ii) Total number of PCB Transformers and total weight in kilograms of any PCBs contained in the transformers; and

(iii) Total number of PCB Large High or Low Voltage Capacitors.

(2) For PCBs and PCB Items removed from service, the location of the initial disposal or storage facility and the name of the owner or operator of the facility.

(3) Total quantities of PCBs and PCB Items remaining in service at the end of the calendar year using the following breakdown:

(i) Total weight in kilograms of any PCBs and PCB Items in PCB Containers, including the identification of container contents such as liquids and capacitors;

(ii) Total number of PCB Transformers and total weight in kilograms of any PCBs contained in the transformers; and

(iii) Total number of PCB Large High or Low Voltage Capacitors.

(b) *Disposal and storage facilities.* Each owner or operator of a facility (including high efficiency boiler operations) used for the storage or disposal of PCBs and PCB Items shall by July 1, 1979 and each July 1 thereafter prepare and maintain a document that includes the information required in paragraph (b)(1) thru (4) of this section for PCBs and PCB Items that were handled at the facility during the previous calendar year. The document shall be retained at each facility for at least 5 years after the facility is no longer used for the storage or disposal of PCBs and PCB Items except that in the case of chemical waste landfills, the document shall be maintained at

least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs and PCB Items. The documents shall be available at the facility for inspection by authorized representatives of the Environmental Protection Agency. If the facility ceases to be used for PCB storage or disposal, the owner or operator of such facility shall notify within 60 days the EPA Regional Administrator of the region in which the facility is located that the facility has ceased storage or disposal operations. The notice shall specify where the documents that are required to be maintained by this paragraph are located. The following information shall be included in each document:

(1) The date when any PCBs and PCB Items were received by the facility during the previous calendar year for storage or disposal, and identification of the facility and the owner or operator of the facility from whom the PCBs were received;

(2) The date when any PCBs and PCB Items were disposed of at the disposal facility or transferred to another disposal or storage facility, including the identification of the specific types of PCBs and PCB Items that were stored or disposed of;

(3) A summary of the total weight in kilograms of PCBs and PCB Articles in containers and the total weight of PCBs contained in PCB Transformers, that have been handled at the facility during the previous calendar year. This summary shall provide totals of the above PCBs and PCB Items which have been:

(i) Received during the year;

(ii) Transferred to other facilities during the year; and

(iii) Retained at the facility at the end of the year. In addition the contents of PCB Containers shall be identified. When PCB Containers and PCBs contained in a transformer are transferred to other storage or disposal facilities, the identification of the facility to which such PCBs and PCB Items were transferred shall be included in the document.

(4) Total number of any PCB Articles or PCB Equipment not in PCB Containers, received during the calendar year, transferred to other storage

or disposal facilities during the calendar year, or remaining on the facility site at the end of the calendar year. The identification of the specific types of PCB Articles and PCB Equipment received, transferred, or remaining on the facility site shall be indicated. When PCB Articles and PCB Equipment are transferred to other storage or disposal facilities, the identification of the facility to which the PCB Articles and PCB Equipment were transferred must be included.

NOTE: Any requirements for weights in kilograms of PCBs may be calculated values if the internal volume of containers and transformers is known and included in the reports, together with any assumptions on the density of the PCBs contained in the containers or transformers.

(c) *Incineration facilities.* Each owner or operator of a PCB incinerator facility shall collect and maintain for a period of 5 years from the date of collection the following information, in addition to the information required in paragraph (b) of this section:

(1) When PCBs are being incinerated, the following continuous and short-interval data:

(i) Rate and quantity of PCBs fed to the combustion system as required in § 761.70(a)(3);

(ii) Temperature of the combustion process as required in § 761.70(a)(4); and

(iii) Stack emission product to include O₂, CO, and CO₂ as required in § 761.70(a)(7).

(2) When PCBs are being incinerated, data and records on the monitoring of stack emissions as required in § 761.70(a)(6).

(3) Total weight in kilograms of any solid residues generated by the incineration of PCBs and PCB Items during the calendar year, the total weight in kilograms of any solid residues disposed of by the facility in chemical waste landfills, and the total weight in kilograms of any solid residues remaining on the facility site.

(4) When PCBs and PCB Items are being incinerated, additional periodic data shall be collected and maintained as specified by the Regional Administrator pursuant to § 761.70(d)(4).

(5) Upon any suspension of the operation of any incinerator pursuant to § 761.70(a)(8), the owner or operator of such an incinerator shall prepare a document. The document shall, at a minimum, include the date and time of the suspension and an explanation of the circumstances causing the suspension of operation. The document shall be sent to the appropriate Regional Administrator within 30 days of any such suspension.

(d) *Chemical waste landfill facilities.* Each owner or operator of a PCB chemical waste landfill facility shall collect and maintain until at least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs the following information in addition to the information required in paragraph (b) of this section:

(1) Any water analysis obtained in compliance with § 761.75(b)(6)(iii); and

(2) Any operations records including burial coordinates of wastes obtained in compliance with § 761.75(b)(8)(ii).

(e) *High efficiency boiler facilities.* Each owner or operator of a high efficiency boiler used for the disposal of liquids between 50 and 500 ppm PCB shall collect and maintain for a period of 5 years the following information, in addition to the information required in paragraph (b) of this section:

(1) For each month PCBs are burned in the boiler the carbon monoxide and excess oxygen data required in § 761.60(a)(2)(iii)(A)(8) and § 761.60(a)(3)(iii)(A)(8);

(2) The quantity of PCBs burned each month as required in § 761.60(a)(2)(iii)(A)(7) and § 761.60(a)(3)(iii)(A)(7); and

(3) For each month PCBs (other than mineral oil dielectric fluid) are burned, chemical analysis data of the waste as required in § 761.60(a)(3)(iii)(B)(6).

(f) *Retention of special records by storage and disposal facilities.* In addition to the information required to be maintained under paragraphs (b), (c), (d) and (e) of this section, each owner or operator of a PCB storage or disposal facility (including high efficiency boiler operations) shall collect and maintain for the time period specified in paragraph (b) of this section the following data:

(1) All documents, correspondence, and data that have been provided to the owner or operator of the facility by any State or local government agency and that pertain to the storage or disposal of PCBs and PCB Items at the facility.

(2) All documents, correspondence, and data that have been provided by the owner or operator of the facility to any State or local government agency and that pertain to the storage or disposal of PCBs and PCB Items at the facility.

(3) Any applications and related correspondence sent by the owner or operator of the facility to any local, State, or Federal authorities in regard to waste water discharge permits, solid waste permits, building permits, or other permits or authorizations such as those required by §§ 761.70(d) and 761.41(c).

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

144 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and 47 FR 37360, Aug. 25, 1982; 49 FR 28191, July 10, 1984)

§ 761.185 Certification program and retention of records by importers and persons generating PCBs in excluded manufacturing processes.

(a) In addition to meeting the basic requirements of § 761.1(f) and the definition of excluded manufacturing processes at § 761.3, manufacturers with processes inadvertently generating PCBs and importers of products containing inadvertently generated PCBs must report to EPA any excluded manufacturing process or imports for which the concentration of PCBs in products leaving the manufacturing site or imported is greater than 2 micrograms per gram (2 µg/g, roughly 2 ppm) for any resolvable gas chromatographic peak. Such reports must be filed by October 1, 1984 or, if no processes or imports require reports at the time, within 90 days of having processes or imports for which such reports are required.

(b) Manufacturers required to report by paragraph (a) of this section must transmit a letter notifying EPA of the number, the type, and the location of excluded manufacturing processes in

which PCBs are generated when the PCB level in products leaving any manufacturing site is greater than 2 µg/g for any resolvable gas chromatographic peak. Importers required to report by paragraph (a) of this section must transmit a letter notifying EPA of the concentration of PCBs in imported products when the PCB concentration of products being imported is greater than 2 µg/g for any resolvable gas chromatographic peak. Persons must also certify the following:

(1) Their compliance with all applicable requirements of § 761.1(f), including any applicable requirements for air and water releases and process waste disposal.

(2) Whether determinations of compliance are based on actual monitoring of PCB levels or on theoretical assessments.

(3) That such determinations of compliance are being maintained.

(4) If the determination of compliance is based on a theoretical assessment, the letter must also notify EPA of the estimated PCB concentration levels generated and released.

(c) Any person who reports pursuant to paragraph (a) of this section:

(1) Must have performed either a theoretical analysis or actual monitoring of PCB concentrations.

(2) Must maintain for a period of three years after ceasing process operations or importation, or for seven years, whichever is shorter, records containing the following information:

(i) *Theoretical analysis.* Manufacturers records must include: the reaction or reactions believed to be generating PCBs; the levels of PCBs generated; and the levels of PCBs released. Importers records must include: the reaction or reactions believed to be generating PCBs and the levels of PCBs generated; the basis for all estimations of PCB concentrations; and the name and qualifications of the person or persons performing the theoretical analysis; or

(ii) *Actual monitoring.* (A) The method of analysis.

(B) The results of the analysis, including data from the Quality Assurance Plan.

(C) Description of the sample matrix.

(D) The name of the analyst or analysts.

(E) The date and time of the analysis.

(F) Numbers for the lots from which the samples are taken.

(d) The certification required by paragraph (b) of this section must be signed by a responsible corporate officer. This certification must be maintained by each facility or importer for a period of three years after ceasing process operation or importation, or for seven years, whichever is shorter, and must be made available to EPA upon request. For the purpose of this section, a responsible corporate officer means:

(1) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.

(2) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25,000,000 (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(e) Any person signing a document under paragraph (d) of this section shall also make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information. Based on my inquiry of the person or persons directly responsible for gathering information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for falsifying information, including the possibility of fines and imprisonment for knowing violations.

Dated: _____
Signature: _____

(f) This report must be submitted to the U.S. Environmental Protection Agency, Document Processing Center, P.O. Box 2070, Rockville, MD 20852, Attention: PCB Notification. This report must be submitted by October

1, 1984 or within 90 days of starting up processes or commencing importation of PCBs.

(g) This certification process must be repeated whenever process conditions are significantly modified to make the previous certification no longer valid.

(Approved by the Office of Management and Budget under control number 2070-0008)

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605))

[49 FR 28191, July 10, 1984; 49 FR 33019, Aug. 20, 1984]

§ 761.187 Reporting importers and by persons generating PCBs in excluded manufacturing processes.

In addition to meeting the basic requirements of § 761.1(f) and the definition of excluded manufacturing process at § 761.3, PCB-generating manufacturing processes or importers of PCB-containing products shall be considered "excluded manufacturing processes" only when the following conditions are met:

(a) Data are reported to the EPA by the owner/operator or importer concerning the total quantity of PCBs in product from excluded manufacturing processes leaving any manufacturing site in any calendar year when such quantity exceeds 0.0025 percent of that site's rated capacity for such manufacturing processes as of October 1, 1984; or the total quantity of PCBs imported in any calendar year when such quantity exceeds 0.0025 percent of the average total quantity of such product containing PCBs imported by such importer during the years 1978, 1979, 1980, 1981 and 1982.

(b) Data are reported to the EPA by the owner/operator concerning the total quantity of inadvertently generated PCBs released to the air from excluded manufacturing processes at any manufacturing site in any calendar year when such quantity exceeds 10 pounds.

(c) Data are reported to the EPA by the owner/operator concerning the total quantity of inadvertently generated PCBs released to water from excluded manufacturing processes from any manufacturing site in any calendar

year when such quantity exceeds 10 pounds.

(d) These reports must be submitted to the U.S. Environmental Protection Agency, Document Processing Center, P.O. Box 2070, Rockville, Maryland 20852, Attention: PCB Notification.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605))

(Approved by the Office of Management and Budget under control number 2070-0008)

[49 FR 28192, July 10, 1984]

§ 761.193 Maintenance of monitoring records by persons who import, manufacture, process, distribute in commerce, or use chemicals containing inadvertently generated PCBs.

(a) Persons who import, manufacture, process, distribute in commerce, or use chemicals containing PCBs present as a result of inadvertent generation or recycling who perform any actual monitoring of PCB concentrations must maintain records of any such monitoring for a period of three years after a process ceases operation or importing ceases, or for seven years, whichever is shorter.

(b) Monitoring records maintained pursuant to paragraph (a) of this section must contain:

(1) The method of analysis.
(2) The results of the analysis, including data from the Quality Assurance Plan.

(3) Description of the sample matrix.
(4) The name of the analyst or analysts.

(5) The date and time of the analysis.

(6) Numbers for the lots from which the samples are taken.

(Approved by the Office of Management and Budget under control number 2070-0008)

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605))

[49 FR 28193, July 10, 1984]

DIVISION 110
HAZARDOUS WASTE MANAGEMENT

Polychlorinated Biphenyls (PCBs)

Subdivision A: General

340-110-001 Purpose and applicability.

340-110-003 Definitions.

Subdivision B: (Reserved)

Subdivision C: Marking of PCBs and PCB Items

340-110-040 Marking requirements.

340-110-045 Marking formats.

Subdivision D: Disposal of PCBs and PCB Items

340-110-060 Disposal requirements.

340-110-065 Storage for disposal.

340-110-070 Incineration.

340-110-075 PCB landfills.

340-110-077 Permits.

340-110-079 Decontamination.

Subdivisions E - I: (Reserved)

Subdivision J: Records and Reports

340-110-080 Records and monitoring.

Authority: ORS Chapter 468, including 468.020 and 468.900 to .921;
459, including 459.440; and 183.

110-001

Subdivision A: General

Purpose and applicability.

340-110-001 (1) The purpose of this Division is to establish requirements for the storage, disposal and marking prior to disposal of PCBs and PCE items.

(2) This Division applies to all persons who dispose of PCBs or PCE items. Unless it is otherwise specifically provided, the terms PCB and PCEs are used in this rule to refer to any chemical substances and combinations of substances that contain 50 ppm (on a dry weight basis) or greater of PCBs, as defined in rule 340-110-003, including any byproduct, intermediate or impurity manufactured at any point in a process. Any chemical substance and combinations of substances that contain less than 50 ppm PCBs because of any dilution, shall be included as PCE and PCBs unless otherwise specifically provided. Substances that are regulated by this rule include, but are not limited to, dielectric fluids, contaminated solvents, oils, waste oils, heat transfer fluids, hydraulic fluids, paints, sludges, slurries, dredge spoils, soils, materials contaminated as a result of spills, and other chemical substances or combination of substances, including impurities and byproducts.

(3) These regulations are in addition to and do not preempt any local, state or federal statutes or regulations.

Definitions.

340-110-003 For the purpose of this Division:

"Capacitor" means a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric. Types of capacitors are as follows:

(1) "Small capacitor" means a capacitor which contains less than 3 lbs. of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 100 cubic inches may be considered to contain less than 3 lbs. of dielectric fluid and a capacitor whose total volume is more than 200 cubic inches must be considered to contain more than 3 lbs. of dielectric fluid. A capacitor whose total volume is between 100 and 200 cubic inches may be considered to contain less than 3 lbs. of dielectric fluid if the total weight of the capacitor is less than 9 lbs.

(2) "Large high voltage capacitor" means a capacitor which contains 3 lbs. or more of dielectric fluid and which operates at 2000 volts (a.c. or d.c.) or above.

(3) "Large low voltage capacitor" means a capacitor which contains 3 lbs. or more of dielectric fluid and which operates below 2000 volts (a.c. or d.c.).

"Department" means the Department of Environmental Quality.

"Disposal" means intentionally or accidentally to discard, throw away or otherwise complete or terminate the useful life of PCBs and PCE items. Disposal includes spills, leaks and other discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating or confining PCBs and PCE items.

"Incinerator" means an engineered device using controlled flame combustion to thermally degrade PCBs and PCE items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns and high temperature boilers.

"Leak" or "leaking" means any instance in which a PCB article, PCB container or PCB equipment has any PCBs on any portion of its external surface.

"Mark" means the descriptive name, instructions, cautions or other information applied to PCBs and PCB items, or other objects subject to these regulations.

"Marked" means the marking of PCB items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label or by any other method that meets the requirements of these regulations.

"Mixture" means any combination of two or more chemical substances if the combination does not occur in nature and is not, in whole or in part, the result of a chemical reaction; except that such term does include any combination which occurs, in whole or in part, as a result of a chemical reaction if none of the chemical substances comprising the combination is a new chemical substance and if the combination could have been manufactured for commercial purposes without a chemical reaction at the time the chemical substances comprising the combination were combined.

"Municipal solid wastes" means garbage, refuse, sludges, wastes and other discarded materials resulting from residential and nonindustrial operations and activities, such as household activities, office functions and commercial housekeeping wastes.

"PCB" and "PCBs" means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance. (See rule 340-110-001(2), for applicable concentrations of PCBs. PCB and PCBs as contained in PCB items are defined in this rule.)

"PCB article" means any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB article" includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB article.

"PCB article container" means any package, can, bottle, bag, barrel, drum, tank or other device used to contain PCB articles or PCB equipment, and whose surface(s) has not been in direct contact with PCBs.

"PCB container" means any package, can, bottle, bag, barrel, drum, tank or other device that contains PCBs or PCB articles and whose surface(s) has been in direct contact with PCBs.

"PCB equipment" means any manufactured item, other than a PCB container or a PCB article container, which contains a PCB article or other PCB equipment, and includes microwave ovens, electronic equipment and fluorescent light ballasts and fixtures.

"PCB item" is defined as any PCB article, PCB article container, PCB container or PCB equipment, that deliberately or unintentionally contains or has as a part of it any PCB or PCBs at a concentration of 50 ppm or greater.

"PCB landfill" means a landfill at which protection against risk of injury to health or the environment from migration of PCBs to land, water or the atmosphere is provided from PCBs and PCB items deposited therein by locating, engineering and operating the landfill as specified in rule 340-110-075.

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"PCB transformer" means any transformer that contains 500 ppm PCB or greater.

"PCB-contaminated electrical equipment" means any electrical equipment, including but not limited to transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets and cable, that contain 50 ppm or greater PCB, but less than 500 ppm PCB. Oil-filled electrical equipment other than circuit breakers, reclosers and cable whose PCB concentration is unknown must be assumed to be a PCB-contaminated electrical equipment.

"Person" means the United States, the state or a public or private corporation, local government unit, public agency, individual, partnership, association, firm, trust, estate or any other legal entity.

"Storage for disposal" means temporary storage of PCBs that have been designated for disposal.

"Transport vehicle" means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle.

"Waste oil" means used products primarily derived from petroleum, which include, but are not limited to, fuel oils, motor oils, gear oils, cutting oils, transmission fluids, hydraulic fluids and dielectric fluids.

Marking requirements.

340-110-040 (1) Each of the following items, when removed from service for disposal, shall be marked as illustrated in Figure 1 of rule 340-110-045(1): The mark illustrated in Figure 1 is referred to as M_L throughout this Subdivision.

- (a) PCB containers (see also section (3) of this rule);
 - (b) PCB transformers (marking of PCB-contaminated electrical equipment is not required);
 - (c) PCB large high voltage capacitors;
 - (d) Equipment containing a PCB transformer or a PCB large high voltage capacitor;
 - (e) PCB large low voltage capacitors;
 - (f) Electric motors using PCB coolants (see also section (3) of this rule);
 - (g) Hydraulic systems using PCB hydraulic fluid (see also section (3) of this rule);
 - (h) Heat transfer systems (other than PCB transformers) using PCBs (see also section (3) of this rule);
 - (i) PCB article containers containing articles or equipment that must be marked under subsections (1)(a) through (h) above;
 - (j) Each storage area used to store PCBs and PCB items for disposal.
- (2) Each transport vehicle shall be marked on each end and side with M_L as described in rule 340-110-045(1) if it is loaded with PCB containers that contain more than 99.4 lbs. of PCBs in the liquid phase or with one or more PCB transformers (see also section (3) of this rule);
- (3) PCB items in subsections (1)(a), (f), (g) and (h) containing PCBs in concentrations of 50 to 500 ppm and applicable transport vehicles in section (2) of this rule loaded with PCB containers that contain more than 99.4 lbs. of liquid PCBs shall also be marked with mark M_L as described in rule 340-110-045(1).
- (4) Where mark M_L is specified but the PCB article or PCB equipment is too small to accommodate the smallest permissible size of mark M_L , mark M_S as described in rule 340-110-045(2) may be used instead of mark M_L .
- (5) All marks required by this Subdivision must be placed in a position on the exterior of the PCB items or transport vehicles so that the marks can be easily read by any persons inspecting or servicing the marked PCB items or transport vehicles.

Marking formats.

340-110-045 (1) Large PCB Mark - M_L . Mark M_L shall be as shown in Figure 1, letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB article, PCB equipment or PCB container. The size of the mark shall be at least 6 inches on each side. If the PCB article or PCB equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 2 inches on each side.

(2) Small PCB Mark - M_S . Mark M_S shall be as shown in Figure 2, letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB article, PCB equipment or PCB container. The mark shall be a rectangle 1 inch by 2 inches. If the PCB article or PCB equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 0.4 by 0.8 inches.

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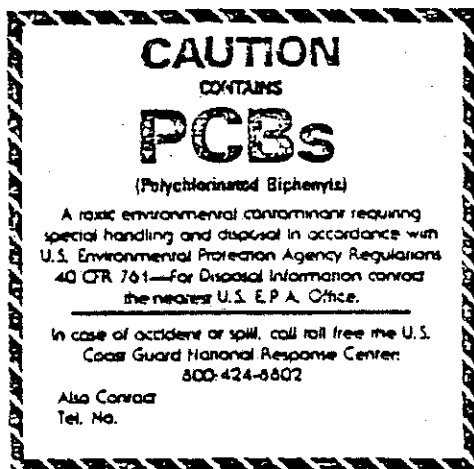


Figure 1

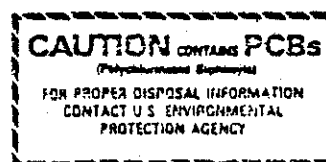


Figure 2

Subdivision D: Disposal of PCBs and PCB Items

(Comment: This Subdivision does not require removal of PCBs and PCB items from service and disposal earlier than would normally be the case. However, when PCBs and PCB items are removed from service and disposed of, disposal must be undertaken in accordance with these regulations. PCBs and PCB items landfilled prior to February 17, 1978 (the date the federal PCB regulations were initially adopted), are not required to be removed for disposal. However, if such PCBs and PCB items are removed from a disposal site, they must be disposed of in accordance with this Subdivision.)

Disposal requirements.

340-110-060 (1) PCBs. (a) Except as provided in subsections (1)(b), (c), (d) and (e) of this rule, PCBs must be disposed of in an incinerator which complies with rule 340-110-070.

(b) Mineral oil dielectric fluid from PCB-contaminated electrical equipment containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, must be disposed of in one of the following:

(A) In an incinerator that complies with rule 340-110-070;

(B) In a PCB landfill that complies with rule 340-110-075 if information is provided to the owner or operator of the chemical waste landfill that shows that the mineral oil dielectric fluid does not exceed 500 ppm PCB and is not an ignitable waste as described in rule 340-110-075(2)(h)(C);

(C) In a high efficiency boiler provided that:

(i) The boiler complies with the following criteria:

(I) The boiler is rated at a minimum of 50 million Btu/hour;

(II) If the boiler uses natural gas or oil as the primary fuel, the carbon monoxide concentration in the stack is 50 ppm or less and the excess oxygen is at least 3% when PCBs are being burned;

(III) If the boiler uses coal as the primary fuel, the carbon monoxide concentration in the stack is 100 ppm or less and the excess oxygen is at least 3% when PCBs are being burned;

(IV) The mineral oil dielectric fluid does not comprise more than 10% (on a volume basis) of the total fuel feed rate;

(V) The mineral oil dielectric fluid is not fed into the boiler unless the boiler is operating at its normal operating temperature (this prohibits feeding these fluids during either start up or shut down operations);

(VI) The owner or operator of the boiler:

(a) Continuously monitors and records the carbon monoxide concentration and excess oxygen percentage in the stack gas while burning mineral oil dielectric fluid; or

(b) If the boiler will burn less than 30,000 gallons of mineral oil dielectric fluid per year, measures and records the carbon monoxide concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 minutes while burning mineral oil dielectric fluid.

(VII) The primary fuel feed rates, mineral oil dielectric fluid feed rates, and total quantities of both primary fuel and mineral oil dielectric fluid fed to the boiler are measured and recorded at regular intervals of no longer than 15 minutes while burning mineral oil dielectric fluid.

(VIII) The carbon monoxide concentration and the excess oxygen percentage are checked at least once every hour that mineral oil dielectric fluid is burned. If either measurement falls below the levels specified

in this rule, the flow of mineral oil dielectric fluid to the boiler shall be stopped immediately.

(ii) Thirty days before any person burns mineral oil dielectric fluid in the boiler, the person gives written notice to the Department and that the notice contains the following information:

(I) The name and address of the owner or operator of the boiler and the address of the boiler;

(II) The boiler rating in units of Btu/hour;

(III) The carbon monoxide concentration and the excess oxygen percentage in the stack of the boiler when it is operated in a manner similar to the manner in which it will be operated when mineral oil dielectric fluid is burned; and

(IV) The type of equipment, apparatus and procedures to be used to control the feed of mineral oil dielectric fluid to the boiler and to monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack.

(iii) When burning mineral oil dielectric fluid, the boiler must operate at a level of output no less than the output at which the measurements required under sub-subparagraph (1)(b)(C)(ii)(III) of this rule were taken.

(iv) Any person burning mineral oil dielectric fluid in a boiler obtains the following information and retains the information for five years at the boiler location:

(I) The data required to be collected under sub-subparagraphs (1)(b)(C)(i)(VI) and (VII) of this rule; and

(II) The quantity of mineral oil dielectric fluid burned in the boiler each month;

(D) In a facility that is permitted in accordance with rule 340-110-060(5). For the purpose of burning mineral oil dielectric fluid, an applicant under rule 340-110-060(5) must show that his combustion process destroys PCBs as efficiently as does a high efficiency boiler, as defined in paragraph (1)(b)(C) of this rule, or a rule 340-110-070 permitted incinerator.

(c) Liquids, other than mineral oil dielectric fluid, containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, shall be disposed of:

(A) In an incinerator that complies with rule 340-110-070;

(B) In a PCB landfill that complies with rule 340-110-075 if information is provided to the owner or operator of the chemical waste landfill that shows that the waste does not exceed 500 ppm PCB and is not an ignitable waste as described in rule 340-110-075(2)(h)(C);

(C) In a high efficiency boiler provided that:

(i) The boiler complies with the following criteria:

(I) The boiler is rated at a minimum of 50 million Btu/hour;

(II) If the boiler uses natural gas or oil as the primary fuel, the carbon monoxide concentration in the stack is 50 ppm or less and the excess oxygen is at least 3% when PCBs are being burned;

(III) If the boiler uses coal as the primary fuel, the carbon monoxide concentration in the stack is 100 ppm or less and the excess oxygen is at least 3% when PCBs are being burned;

(IV) The waste does not comprise more than 10% (on a volume basis) of the total fuel feed rate;

(V) The waste is not fed into the boiler unless the boiler is operating at its normal operating temperature (this prohibits feeding these fluids during either start up or shut down operations);

(VI) The owner or operator of the boiler must:

(a) Continuously monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack gas while burning waste fluid; or

(b) If the boiler will burn less than 30,000 gallons of waste fluid per year, measure and record the carbon monoxide concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 minutes while burning waste fluid;

(VII) The primary fuel feed rates, waste fluid feed rates, and total quantities of both primary fuel and waste fluid fed to the boiler must be measured and recorded at regular intervals of no longer than 15 minutes while burning waste fluid; and

(VIII) The carbon monoxide concentration and the excess oxygen percentage are checked at least once every hour that the waste is burned. If either measurement falls below the levels specified in this rule, the flow of waste to the boiler shall be stopped immediately.

(ii) Prior to any person burning these liquids in the boiler, a permit must be obtained from the Department and any persons seeking a permit must submit to the Department a request containing at least the following information:

(I) The name and address of the owner or operator of the boiler and the address of the boiler;

(II) The boiler rating in units of Btu/hour;

(III) The carbon monoxide concentration and the excess oxygen percentage in the stack of the boiler when it is operated in a manner similar to the manner in which it will be operated when low concentration PCB liquid is burned; and

(IV) The type of equipment, apparatus and procedures to be used to control the feed of waste fluid to the boiler and to monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack.

(V) The type of waste to be burned (e.g., hydraulic fluid, contaminated fuel oil, heat transfer fluid, etc.);

(VI) The concentration of PCBs and of any other chlorinated hydrocarbon in the waste and the results of analyses using the American Society of Testing and Materials (ASTM) methods as referenced: Carbon and hydrogen content using ASTM D-3178, nitrogen content using ASTM E-258, sulfur content using ASTM D-2784, D-1266 or D-129, chlorine content using ASTM D-808, water and sediment content using ASTM D-2709 or D-1796, ash content using ASTM D-482, calorific value using ASTM D-240, carbon residue using either ASTM D-2158 or D-524, and flash point using ASTM D-93;

(VII) The quantity of wastes estimated to be burned in a 30-day period;

(VIII) An explanation of the procedures to be followed to ensure that burning the waste will not adversely affect the operation of the boiler such that combustion efficiency will decrease.

(iii) On the basis of the information in subparagraph (1)(c)(C)(ii) of this rule and any other available information, the Department may, at its discretion, find that the alternate disposal method will not present an unreasonable risk of injury to health or the environment and permit the use of the boiler;

(iv) When burning PCB wastes, the boiler must operate at a level of output no less than the output at which the measurements required under sub-subparagraph (1)(c)(C)(ii)(III) of this rule were taken; and

(v) Any person burning liquids in boilers permitted in subparagraph (1)(c)(C)(iii) of this rule, must obtain the following information and

retain the information for five years at the boiler location:

(I) The data required to be collected in sub-subparagraphs (1)(c)(C)(i)(VI) and (VII) of this rule;

(II) The quantity of low concentration PCB liquid burned in the boiler each month;

(III) The analysis of the waste required by sub-subparagraph (1)(c)(C)(ii)(VI) of this rule taken once a month for each month during which low concentration PCB liquid is burned in the boiler.

(D) In a facility that is permitted in accordance with rule 340-110-060(5). For the purpose of burning liquids, other than mineral oil dielectric fluid, containing 50 ppm or greater PCB, but less than 500 ppm PCB, an applicant under rule 340-110-060(5) must show that his combustion process destroys PCBs as efficiently as does a high efficiency boiler, as defined in paragraph (1)(b)(C) of this rule, or a rule 340-110-070 incinerator.

(d) Any non-liquid PCBs in the form of contaminated soil, rags or other debris shall be disposed of:

(A) In an incinerator which complies with rule 340-110-070; or

(B) In a PCB landfill which complies with rule 340-110-075.

(Comment: Except as provided in rule 340-110-075(2)(h)(B), liquid PCBs shall not be processed into non-liquid forms to circumvent the high temperature incineration requirements of rule 340-110-060(1).

(e) All dredged materials and municipal sewage treatment sludges that contain PCBs shall be disposed of:

(A) In an incinerator which complies with rule 340-110-070;

(B) In a PCB landfill which complies with rule 340-110-075; or

(C) Upon application, using a disposal method to be permitted by the Department. Applications for disposal in a manner other than prescribed in paragraph (A) or (B) of this subsection above must be made in writing to the Department. The application must contain information that, based on technical, environmental and economic considerations, indicates that disposal in an incinerator or chemical waste landfill is not reasonable and appropriate, and that the alternate disposal method will provide adequate protection to health and the environment. The Department may request other information that it believes to be necessary for evaluation of the alternate disposal method. The permit may contain any appropriate limitations on the alternate method for disposal. In addition to these regulations, the Department shall consider other applicable guidelines, criteria and regulations to ensure that the discharges of dredged material and sludges that contain PCBs and other contaminants are adequately controlled to protect the environment. The person to whom such permit is issued must comply with all limitations contained in the permit.

(f) When storage is desired prior to disposal, PCBs shall be stored in a facility which complies with rule 340-110-065.

(2) PCB articles. (a) Transformers. (A) PCB transformers shall be disposed of in accordance with either of the following:

(i) In an incinerator that complies with rule 340-110-070; or

(ii) In a PCB landfill which complies with rule 340-110-075; Provided, that the transformer is first drained of all free flowing liquid, filled with solvent, allowed to stand for at least 18 hours and then drained thoroughly. PCB liquids that are removed shall be disposed of in accordance with section (1) of this rule. Solvents may include kerosene, xylene, toluene and other solvents in which PCBs are readily soluble. Precautionary measures should be taken, however, that the solvent flushing procedures is conducted in accordance with applicable safety and health

standards as required by federal or state regulations.

(B) PCB-contaminated transformers shall be disposed of by draining all free flowing liquid from the transformer and disposing of the liquid in accordance with subsection (1)(b) of this rule. The disposal of the drained transformer is not regulated by this rule.

(b) PCB capacitors. (A) The disposal of any capacitor shall comply with all requirements of this Subdivision unless it is known from label or name plate information, manufacturer's literature (including documented communications with the manufacturer), or chemical analysis that the capacitor does not contain PCBs.

(B) Any person may dispose of PCB small capacitors as municipal solid waste, unless that person is subject to the requirements of paragraph (2)(b)(D) of this rule.

(C) Any PCB large high or low voltage capacitor which contains 500 ppm or greater PCBs, owned by any person, shall be disposed of in an incinerator that complies with rule 340-110-070.

(D) Any PCB small capacitor owned by any person who manufactures or at any time manufactured PCB capacitors or PCB equipment and acquired the PCB capacitors in the course of such manufacturing shall be disposed of in an incinerator which complies with rule 340-110-070.

(E)(i) Notwithstanding the disposal requirements imposed by paragraph (C) or (D) of this subsection, PCB capacitors may be disposed of in PCB chemical waste landfills that comply with rule 340-110-075 if the EPA publishes a notice in the Federal Register declaring that those landfills are available for such disposal.

(ii) Prior to such disposal, the PCB capacitors shall be placed in one of the Department of Transportation specification containers identified in rule 340-110-065(3)(f) or in containers that comply with 49 CFR 178.118 (specification 17H containers). Large PCB capacitors which are too big to fit inside one of these containers shall be placed in a container with strength and durability equivalent to the DOT specification containers. In all cases, interstitial space in the container shall be filled with sufficient absorbent material (such as sawdust or soil) to absorb any liquid PCBs remaining in the capacitors.

(c) PCB hydraulic machines. PCB hydraulic machines such as die casting machines may be disposed of as municipal solid waste or salvage provided that the machines are drained of all free-flowing liquid and the liquid is disposed of in accordance with the provisions of section (1) of this rule. If the PCB liquid contains 1000 ppm PCB or greater, then the hydraulic machine must be flushed prior to disposal with a solvent containing less than 50 ppm PCB (see transformer solvents comment in subparagraph (2)(a)(A)(ii) of this rule) and the solvent disposed of in accordance with section (1) of this rule.

(d) PCB-contaminated electrical equipment. All PCB-contaminated electrical equipment except capacitors shall be disposed of by draining all free flowing liquid from the electrical equipment and disposing of the liquid in accordance with subsection (1)(b) or (c) of this rule. The disposal of the drained electrical equipment is not regulated by this rule. Capacitors that contain between 50 and 500 ppm PCBs shall be disposed of in an incinerator that complies with rule 340-110-070 or in a PCB landfill that complies with rule 340-110-075.

(e) Other PCB articles. (A) PCB articles with a PCB concentration of 500 ppm or greater must be disposed of:

- (i) In an incinerator that complies with rule 340-110-070; or
- (ii) In a PCB landfill that complies with rule 340-110-075, provided

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that all free-flowing liquid PCBs have been thoroughly drained from any articles before the articles are placed in the PCB landfill and that the drained liquids are disposed of in an incinerator that complies with rule 340-110-070.

(B) PCB articles with a PCB concentration between 50 and 500 ppm must be disposed of by draining all free flowing liquid from the article and disposing of the liquid in accordance with subsection (1)(b) or (c) of this rule. The disposal of the drained article is not regulated by this rule.

(f) Storage of PCB articles. Except for a PCB article described in paragraph (2)(b)(B) of this rule and hydraulic machines that comply with the municipal solid waste disposal provisions described in subsection (2)(c) of this rule, any PCB article shall be stored in accordance with rule 340-110-065 prior to disposal.

(3) PCB containers. (a) Unless decontaminated in compliance with rule 340-110-079 or as provided in subsection (3)(b) of this rule, a PCB container shall be disposed of:

(A) In an incinerator which complies with rule 340-110-070; or

(B) In a PCB landfill that complies with rule 340-110-075; provided that if there are PCBs in a liquid state, the PCB container shall first be drained and the PCB liquid disposed of in accordance with section (1) of this rule.

(b) Any PCB container used to contain only PCBs at a concentration less than 500 ppm shall be disposed of as municipal solid wastes; provided that if the PCBs are in a liquid state, the PCB container shall first be drained and the PCB liquid disposed of in accordance with section (1) of this rule.

(c) Prior to disposal, a PCB container shall be stored in a facility which complies with rule 340-110-065.

(4) Spills. (a) Spills, leaks and other uncontrolled discharges of PCBs constitute the disposal of PCBs and shall be reported and managed in accordance with Division 108.

(b) PCBs resulting from the cleanup and removal of spills, leaks or other uncontrolled discharges, must be stored and disposed of in accordance with section (1) of this rule.

(5) Any person who is required to incinerate any PCBs and PCB items under this Subdivision and who can demonstrate that an alternate method of destroying PCBs and PCB items exists and that this alternative method can achieve a level of performance equivalent to rule 340-110-070 incinerators or high efficiency boilers as provided in paragraphs (1)(b)(D) and (1)(c)(D) of this rule, may submit a written request to the Department for an exemption from the incineration requirements of rule 340-110-070. The applicant must show that his method of destroying PCBs will not present an unreasonable risk of injury to health or the environment. On the basis of such information and any available information, the Department may, at its discretion, permit the use of the alternate if it finds that the alternate disposal methods provides PCB destruction equivalent to disposal in a rule 340-110-070 incinerator and will not present an unreasonable risk of injury to health or the environment. The permit shall be issued in accordance with Division 106 and may contain such conditions and provisions as the Department deems appropriate. The person to whom such waiver is issued must comply with all limitations contained in the permit.

(6) Testing procedures. (a) Owners or users of mineral oil dielectric fluid electrical equipment may use the following procedures to determine the concentration of PCBs in the dielectric fluid:

(A) Dielectric fluid removed from mineral oil dielectric fluid electrical equipment may be collected in a common container, provided that no other chemical substances or mixtures are added to the container. This common container option does not permit dilution of the collected oil. Mineral oil that is assumed or known to contain at least 50 ppm PCBs must not be mixed with mineral oil that is known or assumed to contain less than 50 ppm PCBs to reduce the concentration of PCBs in the common container. If dielectric fluid from untested, oil-filled circuit breakers, reclosers or cable is collected in a common container with dielectric fluid from other oil-filled electrical equipment, the entire contents of the container must be treated as PCBs at a concentration of at least 50 ppm, unless all of the fluid from the other oil-filled electrical equipment has been tested and shown to contain less than 50 ppm PCBs.

(B) For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common containers or the individual electrical equipment to determine the PCB concentration. Except, that if any PCBs at a concentration of 500 ppm or greater have been added to the container or equipment then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements of this Subdivision. For purposes of this paragraph, representative samples of mineral oil dielectric fluid are either samples taken in accordance with American Society of Testing and Materials method D-923-81 or samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container.

(b) Owners or users of waste oil may use the following procedures to determine the PCB concentration of waste oil:

(A) Waste oil from more than one source may be collected in a common container, provided that no other chemical substances or mixtures, such as non-waste oils, are added to the container.

(B) For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common container or individual containers to determine the PCB concentration, except that if any PCBs at a concentration of 500 ppm or greater have been added to the container then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements of this Subdivision. For purposes of this paragraph, representative samples of waste oil are either samples taken in accordance with American Society of Testing and Materials method D-923 or samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container.

(7) Waste oil. The use of waste oil that contains any detectable concentration of PCB as a sealant, coating or dust control agent is prohibited. Prohibited uses include, but are not limited to, road oiling, general dust control, use as a pesticide or herbicide carrier and use as a rust preventative on pipes.

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Storage for disposal.

340-110-065 (1) Any PCB article or PCB container stored for disposal shall be removed from storage and disposed of as required by Subdivision D within one year from the date when it was first placed into storage.

(2) Except as provided in section (3) of this rule, owners or operators of any facilities used for the storage of PCBs and PCB items designated for disposal shall comply with the following requirements:

(a) The facilities shall meet the following criteria:

(A) Adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB items;

(B) An adequate floor which has continuous curbing with a minimum six inch high curb. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB article or PCB container stored therein or 25% of the total internal volume of all PCB articles or PCB containers stored therein, whichever is greater;

(C) No drain valves, floor drains, expansion joints, sewer lines or other openings that would permit liquids to flow from the curbed area;

(D) Floors and curbing constructed of continuous smooth and impervious materials, such as Portland cement concrete or steel, to prevent or minimize penetration of PCBs; and

(E) Not located at a site that is below the 100-year flood water elevation.

(3)(a) The following PCB items may be stored temporarily in an area that does not comply with the requirements of section (2) of this rule for up to thirty days from the date of their removal from service, provided that a notation is attached to the PCB item or a PCB container (containing the item) indicating the date the item was removed from service:

(A) Non-leaking PCB articles and PCB equipment;

(B) Leaking PCB articles and PCB equipment if placed in a non-leaking PCB container that contains sufficient sorbent materials to absorb any liquid PCBs remaining in the the PCB items;

(C) PCB containers containing non-liquid PCBs such as contaminated soil, rags and debris; and

(D) PCB containers containing liquid PCBs at a concentration between 50 and 500 ppm, provided a Spill Prevention, Control and Countermeasure Plan has been prepared for the temporary storage area in accordance with 40 CFR Part 112. In addition, each container must bear a notation that indicates that the liquids in the drum do not exceed 500 ppm PCB.

(b) Non-leaking and structurally undamaged PCB large high voltage capacitors and PCB-contaminated electrical equipment that have not been drained of free flowing dielectric fluid may be stored on pallets next to a storage facility that meets the requirements of section (2) of this rule. PCB-contaminated electrical equipment that has been drained of free flowing dielectric fluid is not subject to the storage provisions of rule 340-110-065. Storage under this subsection will be permitted only when the storage facility has immediately available unfilled storage space equal to 10% of the volume of capacitors and equipment stored outside the facility. The capacitors and equipment temporarily stored outside the facility shall be checked for leaks weekly.

(c) Any storage area subject to the requirements of section (2) or subsection (3)(a) of this rule shall be marked as required by rule 340-110-040(1)(j).

(d) No item of movable equipment that is used for handling PCBs and PCB items in the storage facilities and that comes in direct contact with

PCBs shall be removed from the storage facility area unless it has been decontaminated as specified in rule 340-110-079.

(e) All PCB articles and PCB containers in storage shall be checked for leaks at least once every 30 days. Any leaking PCB articles and PCB containers and their contents shall be transferred immediately to properly marked non-leaking containers. Any spilled or leaked materials shall be immediately cleaned up, using sorbents or other adequate means, and the PCB-contaminated materials and residues shall be disposed of in accordance with rule 340-110-060(1)(d).

(f) Except as provided in subsection (3)(g) of this rule, any container used for the storage of liquid PCBs shall comply with the Shipping Container Specification of the Department of Transportation (DOT), 49 CFR 178.80 (specification 5 container without removable head), 178.82 (Specification 5B container without removable head), 178.102 (Specification 6D overpack with Specification 2S (178.35) or 2SL (178.35a) polyethylene containers) or 178.116 (Specification 17E container). Any container used for the storage of non-liquid PCBs shall comply with the specifications of 49 CFR 178.80 (Specification 5 container), 178.82 (Specification 5B container) or 178.115 (Specification 17C container). As an alternate, container larger than those specified in DOT Specifications 5, 5B or 17C may be used for non-liquid PCBs if the containers are designed and constructed in a manner that will provide as much protection against leaking and exposure to the environment as the DOT Specification containers, and are of the same relative strength and durability as the DOT Specification containers.

(g) Storage containers for liquid PCBs can be larger than the containers specified in subsection (3)(f) of this rule provided that:

(A) The containers are designed, constructed and operated in compliance with Occupational Safety and Health Standards, 29 CFR 1910.106, Flammable and combustible liquids. Before using these containers for storing PCBs, the design of the containers must be reviewed to determine the effect on the structural safety of the containers that will result from placing liquids with the specific gravity of PCBs into the containers (see 29 CFR 1910.106(b)(1)(f)).

(B) The owners or operators of any facility using containers described in paragraph (3)(g)(A) of this rule shall prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan as described in 40 CFR Part 112. In complying with 40 CFR Part 112, the owner or operator shall read "oil(s)" as "PCB(s)" whenever it appears.

(h) PCB articles and PCB containers shall be dated on the article or container when they are placed in storage. The storage shall be managed so that the PCB articles and PCB containers can be located by the date they entered storage. Storage containers provided in subsection (3)(g) of this rule shall have a record that includes for each batch of PCBs the quantity of the batch and date the batch was added to the container. The record shall also include the date, quantity and disposition of any batch of PCBs removed from the container.

(i) Owners or operators of storage facilities shall establish and maintain records as provided in rule 340-110-080.

Incineration.

340-110-070 (1) Liquid PCBs. An incinerator used for incinerating PCBs shall be permitted by the Department pursuant to section (4) of this rule. The incinerator shall meet all of the requirements specified in

subsections (1)(a) through (i) of this rule, unless a waiver from these requirements is obtained pursuant to subsection (4)(e) of this rule. In addition, the incinerator shall meet any other requirements which may be prescribed pursuant to subsection (4)(d) of this rule.

(a) Combustion criteria shall be either of the following:

(A) Maintenance of the introduced liquids for a 2-second dwell time at 1200° C ($\pm 100^\circ$ C) and 3% excess oxygen in the stack gas; or

(B) Maintenance of the introduced liquids for a 1 1/2-second dwell time at 1600° C ($\pm 100^\circ$ C) and 2% excess oxygen in the stack gas.

(b) Combustion efficiency shall be at least 99.9% computed as follows:

C_{CO_2} = concentration of carbon dioxide

C_{CO} = concentration of carbon monoxide

(c) The rate and quantity of PCBs which are fed to the combustion system shall be measured and recorded at regular intervals of no longer than 15 minutes.

(d) The temperatures of the incineration process shall be continuously measured and recorded. The combustion temperature of the incineration process shall be based on either direct (pyrometer) or indirect (wall thermocouple-pyrometer correlation) temperature readings.

(e) The flow of PCBs to the incinerator shall stop automatically whenever the combustion temperature drops below the temperatures specified in subsection (1)(a) of this rule.

(f) Monitoring of stack emission products shall be conducted:

(A) When an incinerator is first used for the disposal of PCBs under the provisions of this regulation;

(B) When an incinerator is first used for the disposal of PCBs after the incinerator has been modified in a manner which may affect the characteristics of the stack emission products; and

(C) At a minimum such monitoring shall be conducted for the following parameters: (i) O₂; (ii) CO; (iii) CO₂; (iv) Oxides of nitrogen (NO_x); (v) Hydrochloric Acid (HCl); (vi) Total chlorinated organic content (TCO); (vii) PCBs; and (viii) Total particulate matter.

(g) At a minimum monitoring and recording of combustion products and incineration operations shall be conducted for the following parameters whenever the incinerator is incinerating PCBs: (A) O₂; (B) CO; (C) CO₂. The monitoring for O₂ and CO shall be continuous. The monitoring for CO₂ shall be periodic, at a frequency specified by the Department.

(h) The flow of PCBs to the incinerator shall stop automatically when any one or more of the following conditions occur unless a contingency plan is submitted by the incinerator owner or operator and permitted by the Department and the contingency plan indicates what alternative measures the incinerator owner or operator would take if any of the following conditions occur:

(A) Failure of monitoring operations specified in subsection (1)(g) of this rule;

(B) Failure of the PCB feed rate and quantity measuring and recording equipment specified in subsection (1)(c) of this rule; or

(C) Excess oxygen falls below the percentage specified in subsection (1)(a) of this rule.

(i) Water scrubbers shall be used for HCl control during PCB incineration and shall meet any performance requirements specified by the Department. Scrubber effluent shall be monitored and shall comply with

applicable effluent or pretreatment standards, and any other state and federal laws and regulations. An alternate method of HCl control may be used if the alternate method has been approved by the Department. (The HCl neutralizing capability of cement kilns is considered to be an alternate method.)

(2) Non-liquid PCBs. An incinerator used for incinerating non-liquid PCBs, PCB articles, PCB equipment or PCB containers shall be permitted by the Department pursuant to section (4) of this rule. The incinerator shall meet all of the requirements specified in subsections (2)(a) and (b) of this rule unless a waiver from these requirements is obtained pursuant to subsection (4)(e) of this rule. In addition, the incinerator shall meet any other requirements that may be prescribed pursuant to subsection (4)(d) of this rule.

(a) The mass air emissions from the incinerator shall be no greater than 0.001 g PCB/kg of the PCB introduced into the incinerator.

(b) The incinerator shall comply with the provisions of subsections (1)(b), (c), (d), (f), (g), (h)(A) and (B), and (i) of this rule.

(3) Maintenance of data and records. All data and records required by this rule shall be maintained in accordance with rule 340-110-080.

(4) Incinerators permits. Prior to the incineration of PCBs and PCB items, the owner or operator of an incinerator shall obtain a permit from the Department. The permit shall be obtained in the following manner:

(a) Initial report. The owner or operator shall submit to the Department an initial report which contains:

(A) The location of the incinerator;

(B) A detailed description of the incinerator including general site plans and design drawings of the incinerator;

(C) Engineering reports or other information on the anticipated performance of the incinerator;

(D) Sampling and monitoring equipment and facilities available;

(E) Waste volumes expected to be incinerated;

(F) Any local, state or federal permits or approvals; and

(G) Schedules and plans for complying with the permit requirements.

(b) Trial burn. (A) Following receipt of the report described in subsection (4)(a) of this rule, the Department shall determine if a trial burn is required and notify the person who submitted the report whether a trial burn of PCBs and PCB items must be conducted. The Department may require the submission of any other information that the Department finds to be reasonably necessary to determine the need for a trial burn. Such other information shall be restricted to the types of information required in paragraphs (4)(a)(A) through (G) of this rule.

(B) If the Department determines that a trial burn must be held, the person who submitted the report described in subsection (4)(a) of this rule shall submit to the Department a detailed plan for conducting and monitoring the trial burn. At a minimum, the plan must include:

(i) Date trial burn is to be conducted;

(ii) Quantity and type of PCBs and PCB items to be incinerated;

(iii) Parameters to be monitored and location of sampling points;

(iv) Sampling frequency and methods and schedules for sample analyses;

and

(v) Name, address and qualifications of persons who will review analytical results and other pertinent data, and who will perform a technical evaluation of the effectiveness of the trial burn.

(C) Following receipt of the plan described in paragraph (4)(b)(B) of this rule, the Department may approve the plan, require additions or

modifications to the plan, or disapprove the plan. If the plan is disapproved, the Department will notify the person who submitted the plan of such disapproval, together with the reasons why it is disapproved. That person may thereafter submit a new plan in accordance with paragraph (4)(b)(B) of this rule. If the plan is approved (with any additions or modifications which the Department may prescribe), the Department will notify the person who submitted the plan of the approval. Thereafter, the trial burn shall take place at a date and time to be agreed upon between the Department and the persons who submitted the plan.

(c) Other information. In addition to the information contained in the report and plan described in subsections (4)(a) and (b) of this rule, the Department may require the owner or operator to submit any other information that the Department finds to be reasonably necessary to determine whether an incinerator permit shall be approved.

(d) Contents of permit. (A) Except as provided in subsection (4)(e) of this rule, the Department need not permit an incinerator for the disposal of PCB and PCB items unless it finds that the incinerator meets all of the requirements of sections (1) and/or (2) of this rule.

(B) In addition to the requirements of sections (1) and/or (2) of this rule, the Department may include in a permit any other requirements that the Department finds are necessary to ensure that operation of the incinerator does not present an unreasonable risk of injury to health or the environment from PCBs. Such requirements may include a fixed period of time for which the permit is valid.

(e) Waivers. An owner or operator of the incinerator may submit evidence to the Department that operation of the incinerator will not present an unreasonable risk of injury to health or the environment from PCBs, when one or more of the requirements of sections (1) and/or (2) of this rule are not met. On the basis of such evidence and any other available information, the Department may in its discretion find that any requirement of sections (1) and (2) is not necessary to protect against such a risk, and may waive the requirements in any permit for that incinerator. Any finding and waiver under this subsection must be stated in writing and included as part of the permit.

(f) Persons permitted. A permit will designate the persons who own and who are authorized to operate the incinerator, and will apply only to such persons, except as provided in subsection (4)(h) of this rule.

(g) Transfer of property. Any person who owns or operates a permitted PCB incinerator must notify the Department at least 30 days before transferring ownership in the incinerator or the property it stands upon, or transferring the right to operate the incinerator. The transferor must also submit to the Department, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the transferee will abide by the transferor's incinerator permit; however, the Department will require the transferee to apply for a new PCB incinerator permit. The transferee must abide by the transferor's approval until the Department issues a new permit to the transferee.

PCB landfills.

340-110-075 (1) General. A landfill used for the disposal of PCBs and PCB items shall be permitted by the Department pursuant to section (3) of this rule. The landfill shall meet all of the requirements specified in section (2) of this rule, unless a waiver from these requirements is obtained pursuant to subsection (3)(d) of this rule. In addition, the

landfill shall meet any other requirements that may be prescribed pursuant to subsection (3)(c) of this rule.

(2) Technical requirements. Requirements for landfills used for the disposal of PCBs and PCB items are as follows:

(a) Soils. The landfill site shall be located in thick, relatively impermeable formations such as large-area clay pans. Where this is not possible, the soil shall have a high clay and silt content with the following parameters:

(A) In-place soil thickness, 4 feet or compacted soil liner thickness, 3 feet;

(B) Permeability (cm/sec), equal to or less than 1×10^{-7} ;

(C) Percent soil passing No. 200 Sieve, >30;

(D) Liquid Limit, >30; and

(E) Plasticity Index, >15.

(b) Synthetic membrane liners. Synthetic membrane liners shall be used when, in the judgment of the Department, the hydrologic or geologic conditions at the landfill require such a liner in order to provide at least a permeability equivalent to the soils in subsection (2)(a) of this rule. Whenever a synthetic liner is used at a landfill site, special precautions shall be taken to ensure that its integrity is maintained and that it is chemically compatible with PCBs. Adequate soil underlining and soil cover shall be provided to prevent excessive stress on the liner and to prevent rupture of the liner. The liner must have a minimum thickness of 30 mils.

(c) Hydrologic conditions. The bottom of the landfill shall be above the historical high groundwater table as provided below. Floodplains, shorelands and groundwater recharge areas shall be avoided. There shall be no hydraulic connection between the site and standing or flowing surface water. The site shall have monitoring wells and leachate collection. The bottom of the landfill liner system or natural in-place soil barrier shall be at least fifty feet from the historical high water table.

(d) Flood protection. (A) If the landfill site is below the 100-year floodwater elevation, the operator shall provide surface water diversion dikes around the perimeter of the landfill site with a minimum height equal to two feet above the 100-year floodwater elevation.

(B) If the landfill site is above the 100-year floodwater elevation, the operators shall provide diversion structures capable of diverting all of the surface water runoff from a 24-hour, 25-year storm.

(e) Topography. The landfill site shall be located in an area of low to moderate relief to minimize erosion and to help prevent landslides or slumping.

(f) Monitoring systems. (A) Water sampling. (i) For sites receiving PCBs, the groundwater and surface water from the disposal site area shall be sampled prior to commencing operations under the permit required by section (3) of this rule for use as baseline data.

(ii) Any surface watercourse designated by the Department using the authority provided in paragraph (3)(c)(B) of this rule shall be sampled at least monthly when the landfill is being used for disposal operations.

(iii) Any surface watercourse designated by the Department using the authority provided in paragraph (3)(c)(B) of this rule shall be sampled for a time period specified by the Department on a frequency of no less than once every six months after final closure of the disposal area.

(B) Groundwater monitoring wells. (i) If underlying earth materials are homogenous, impermeable and uniformly sloping in one direction, only three sampling points shall be necessary. These three points shall be

equally spaced on a line through the center of the disposal area and extending from the area of highest water table elevation to the area of the lowest water table elevation on the property.

(ii) All monitoring wells shall be cased and the annular space between the monitor zone (zone of saturation) and the surface shall be completely backfilled with Portland cement or an equivalent material and plugged with Portland cement to effectively prevent percolation of surface water into the well bore. The well opening at the surface shall have a removable cap to provide access and to prevent entrance of rainfall or stormwater runoff. The well shall be pumped to remove the volume of liquid initially contained in the well before obtaining a sample for analysis. The discharge shall be treated to meet applicable state or federal discharge standards or recycled to the chemical waste landfill.

(C) Water analysis. As a minimum, all samples shall be analyzed for the following parameters, and all data and records of the sampling and analysis shall be maintained as required in rule 340-110-080(4)(a). Sampling methods and analytical procedures for these parameters shall comply with those specified in "Test Methods for Evaluating Solid Waste," 2nd Ed., EPA SW-846, 7/82 (see rule 340-100-011).

- (i) PCBs.
- (ii) pH.
- (iii) Specific conductance.
- (iv) Chlorinated organics.

(g) Leachate collection. A leachate collection monitoring system shall be installed above the landfill liner. Leachate collection systems shall be monitored monthly for quantity and physiochemical characteristics of leachate produced. The leachate should be either treated to acceptable limits for discharge in accordance with a state permit or disposed of by another state-approved method. Water analysis shall be conducted as provided in paragraph (2)(f)(C) of this rule. Acceptable leachate monitoring/collection systems shall be any of the following design, unless a waiver is obtained pursuant to subsection (3)(d) of this rule.

(A) Simple leachate collection. This system consists of a gravity flow drainfield installed above the waste disposal facility liner. This design is recommended for use when semi-solid or leachable solid wastes are placed in a lined pit excavated into a relatively thick, unsaturated, homogenous layer of low permeability soil.

(B) Compound leachate collection. This system consists of a gravity flow drainfield installed above the waste disposal facility liner and above a secondary installed liner. This design is recommended for use when semi-liquid or leachable solid wastes are placed in a lined pit excavated into relatively permeable soil.

(C) Suction lysimeters. This system consists of a network of porous ceramic cups connected by hoses or tubing to a vacuum pump. The porous ceramic cups or suction lysimeters are installed along the sides and under the bottom of the waste disposal facility liner. This type of system works best when installed in a relatively permeable unsaturated soil immediately adjacent to the bottom and/or sides of the disposal facility.

(h) PCB landfill operations. (A) PCBs and PCB items shall be placed in a landfill in a manner that will prevent damage to containers or articles. Other wastes placed in the landfill that are not chemically compatible with PCBs and PCB items including organic solvents shall be segregated from the PCBs throughout the waste handling and disposal process.

(B) An operation plan shall be developed and submitted to the

Department for approval as required in section (3) of this rule. This plan shall include detailed explanations of the procedures to be used for recordkeeping, surface water handling procedures, excavation and backfilling, waste segregation burial coordinates, vehicle and equipment movement, use of roadways, leachate collection systems, sampling and monitoring procedures, monitoring wells, environmental emergency contingency plans and security measures to protect against vandalism and unauthorized waste placements. Division 104 is a useful reference in preparation of this plan. If the facility is to be used to dispose of liquid waste containing between 50 ppm and 500 ppm PCB, the operations plan must include procedures to determine that liquid PCBs to be disposed of at the landfill do not exceed 500 ppm PCB and measures to prevent the migration of PCBs from the landfill. Bulk liquids not exceeding 500 ppm PCBs may be disposed of provided such waste is pretreated and/or stabilized (e.g., chemically fixed, evaporated, mixed with dry inert absorbent) to reduce its liquid content or increase its solid content so that a non-flowing consistency is achieved to eliminate the presence of free liquids prior to final disposal in a landfill. Containers of liquid PCBs with a concentration between 50 and 500 ppm PCB may be disposed of if each container is surrounded by an amount of inert sorbent material capable of absorbing all of the liquid contents of the container.

(C) Ignitable waste shall not be disposed of in a PCB landfill. Liquid ignitable wastes are wastes that have a flash point less than 60° C (140° F) as determined by the following method or an equivalent method: Flash point of liquids shall be determined by a Pensky-Martens Closed Cup Tester, using the protocol specified in ASTM Standard D-93-79 or D-93-80, or the Setaflash Closed Tester using the protocol specified in ASTM Standard D-3278-78 (see rule 340-100-011).

(D) Records shall be maintained for all PCB disposal operations and shall include information on the PCB concentration in liquid wastes and the three dimensional burial coordinates for PCBs and PCB items. Additional records shall be developed and maintained as required in rule 340-110-080.

(i) Supporting facilities. (A) A six foot woven mesh fence, wall or similar device shall be placed around the site to prevent unauthorized persons and animals from entering.

(B) Roads shall be maintained to and within the site which are adequate to support the operation and maintenance of the site without causing safety or nuisance problems or hazardous conditions.

(C) The site shall be operated and maintained in a manner to prevent safety problems or hazardous conditions resulting from spilled liquids and windblown materials.

(3) Permitting of PCB landfills. Prior to the disposal of any PCBs and PCB Items in a PCB landfill, the owner or operator of the landfill shall obtain a permit from the Department. The permit shall be obtained in the following manner:

(a) Initial report. The owner or operator shall submit to the Department an initial report which contains:

(A) The location of the landfill;

(B) A detailed description of the landfill including general site plans and design drawings;

(C) An engineering report describing the manner in which the landfill complies with the requirements for PCB landfills specified in section (2) of this rule;

(D) Sampling and monitoring equipment and facilities available;

(E) Expected waste volumes of PCBs;

(F) General description of waste materials other than PCBs that are expected to be disposed of in the landfill;

(G) Landfill operations plan as required in section (2) of this rule;

(H) Any local, state or federal permits or approvals; and

(I) Any schedules or plans for complying with the permit requirements.

(b) Other information. In addition to the information contained in the report described in subsection (3)(a) of this rule, the Department may require the owner or operator to submit any other information that it finds to be reasonably necessary to determine whether a PCB landfill permit should be approved. Such other information shall be restricted to the types of information required in paragraphs (3)(a)(A) through (I) of this rule.

(c) Contents of permit. (A) Except as provided in subsection (3)(d) of this rule, the Department need not permit a PCB landfill for the disposal of PCB and PCB items unless he finds that the PCB landfill meets all of the requirements of section (2) of this rule.

(B) In addition to the requirements of section (2) of this rule, the Department may include in a permit any other requirements that it finds are necessary to ensure that operation of the PCB landfill does not present an unreasonable risk of injury to health or the environment from PCBs. Such provisions may include a fixed period of time for which the permit is valid. The permit may also include a stipulation that the operator of the PCB landfill report to the Department any instance when PCBs are detectable during monitoring activities conducted pursuant to subsection (2)(f) of this rule.

(d) Waivers. An owner or operator of a PCB landfill may submit evidence to the Department that operation of the landfill will not present an unreasonable risk of injury to health or the environment from PCBs when one or more of the requirements of section (2) of this rule are not met. On the basis of such evidence and any other available information, the Department may, at its discretion, find that any requirement of section (2) of this rule is not necessary to protect against such a risk and may waive the requirements in any permit for that landfill. Any finding and waiver under this subsection must be stated in writing and included as part of the permit.

(e) Persons permitted. A permit will designate the persons who own and who are authorized to operate the PCB landfill, and will apply only to such persons, except as provided in subsection (3)(g) of this rule.

(f) Transfer of property. Any person who owns or operates a permitted PCB landfill must notify the Department at least 30 days before transferring ownership in the property or transferring the right to conduct the PCB landfill operation. The transferor must also submit to the Department, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the transferee will abide by the transferor's PCB landfill permit; however, the Department will require the transferee to apply for a new PCB landfill permit. In the latter case, the transferee must abide by the transferor's permit until the Department issues a new permit to the transferee.

Permits.

340-110-077 (1) The procedures of Division 106 will be followed in issuing permits required by this Division.

(2) The treatment facility fee schedule set forth in Subdivision G of Division 105 shall apply to permits required by this Division.

(3) Persons currently holding valid management facility permits issued under OAR Chapter 340, Divisions 62 and 63, when those Divisions were in effect, shall be deemed to have a PCB permit until such time as the permit expires, is modified, revoked and reissued, or terminated pursuant to Division 106.

Decontamination.

340-110-079 (1) Any PCE container to be decontaminated shall be decontaminated by flushing the internal surfaces of the container three times with a solvent containing less than 50 ppm PCB. The solubility of PCBs in the solvent must be 5% or more by weight. Each rinse shall use a volume of the normal diluent equal to approximately 10% of the PCE container capacity. The solvent may be reused for decontamination until it contains 50 ppm PCB. The solvent shall then be disposed of as a PCB in accordance with rule 340-110-060(1). Non-liquid PCBs resulting from the decontamination procedures shall be disposed of in accordance with the provisions of rule 340-110-060(1)(d).

(2) Movable equipment used in storage areas shall be decontaminated by swabbing surfaces that have contacted PCBs with a solvent meeting the criteria of section (1) of this rule.

(Comment: Precautionary measures should be taken to ensure that the solvent meets safety and health standards as required by applicable federal and state regulations.)

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Subdivision J: Records and Reports

Records and monitoring.

340-110-080 (1) PCBs and PCB items projected for disposal. Every owner or operator of a facility storing at one time at least 99.4 pounds of PCBs contained in PCB container(s) or one or more PCB transformers, or 50 or more PCB large high or low voltage capacitors shall develop and maintain records on the disposition of PCBs and PCB items. These records shall form the basis of an annual document prepared for each facility by July 1 covering the previous calendar year. Owners or operators with one or more facilities that store PCBs and PCB items in the quantities described above may maintain the records and documents at one of the facilities that is normally occupied for 8 hours a day, provided the identity of this facility is available at each facility storing PCBs and PCB items. The records and documents shall be maintained for at least five years after the facility ceases storing PCBs and PCB items in the prescribed quantities. The following information for each facility shall be included in the annual document:

(a) The dates when PCBs and PCB items are removed from service, are placed into storage for disposal, and are placed into transport for disposal. The quantities of the PCBs and PCB items shall be indicated using the following breakdown:

(A) Total weight in pounds of any PCBs and PCB items in PCB containers including the identification of container contents such as liquids and capacitors;

(B) Total number of PCB transformers and total weight in pounds of any PCBs contained in the transformers; and

(C) Total number of PCB large high or low voltage capacitors.

(b) For PCBs and PCB items removed from service, the location of the initial disposal or storage facility and the name of the owner or operator of the facility.

(Comment: This section is primarily aimed at users of PCBs and PCB items.)

(2) Disposal and storage facilities. Each owner or operator of a facility (including high efficiency boiler operations) used for the storage or disposal of PCBs and PCB items shall, by each July 1, prepare and maintain a document that includes the information required in subsections (2)(a) through (d) of this rule for PCBs and PCB items that were handled at the facility during the previous calendar year. The document shall be retained at each facility for at least 5 years after the facility is no longer used for the storage or disposal of PCBs and PCB items except that in the case of PCB landfills, the document shall be maintained at least 20 years after the PCB landfill is no longer used for the disposal of PCBs and PCB items. The documents shall be available at the facility for inspection by authorized representatives of the Department. If the facility ceases to be used for PCB storage or disposal, the owner or operator of such facility shall notify the Department within 60 days that the facility has ceased storage or disposal operations. The notice shall specify where the documents that are required to be maintained by this section are located. The following information shall be included in each document:

(a) The date when any PCBs and PCB items were received by the facility during the previous calendar year for storage or disposal, and identification of the facility and the owner or operator of the facility from whom the PCBs were received;

(b) The date when any PCBs and PCB items were disposed of at the disposal facility or transferred to another disposal or storage facility, including the identification of the specific types of PCBs and PCB items that were stored or disposed of;

(c) A summary of the total weight in pounds of PCBs and PCB articles in containers and the total weight of PCBs contained in PCB transformers, that have been handled at the facility during the previous calendar year. This summary shall provide totals of the above PCBs and PCB items which have been:

(A) Received during the year;

(B) Transferred to other facilities during the year; and

(C) Retained at the facility at the end of the year. In addition, the contents of PCB containers shall be identified. When PCB containers and PCBs contained in a transformer are transferred to other storage or disposal facilities, the identification of the facility to which such PCBs and PCB items were transferred shall be included in the document.

(d) Total number of any PCB articles or PCB equipment not in PCB containers, received during the calendar year, or remaining on the facility site at the end of the calendar year. The identification of the specific types of PCB articles and PCB equipment received, transferred or remaining on the facility site shall be indicated. When PCB articles and PCB equipment are transferred to other storage or disposal facilities, the identification of the facility to which the PCB articles and PCB equipment were transferred must be included.

(Comment: Any requirements for weights in pounds of PCBs may be calculated values if the internal volume of containers and transformers is known and included in the reports, together with any assumptions on the density of the PCBs contained in the containers or transformers.)

(3) Incineration facilities. Each owner or operator of a PCB incinerator facility shall collect and maintain for a period of 5 years from the date of collection the following information, in addition to the information required in section (2) of this rule:

(a) When PCBs are being incinerated, the following continuous and short-interval data:

(A) Rate and quantity of PCBs fed to the combustion system as required in rule 340-110-070(1)(c);

(B) Temperature of the combustion process as required in rule 340-110-070(1)(d); and

(C) Stack emission products to include O_2 , CO and CO_2 as required in rule 340-110-070(1)(g).

(b) When PCBs are being incinerated, data and records on the monitoring of stack emission as required in rule 340-110-070(1)(f).

(c) Total weight in pounds of any solid residues generated by the incineration of PCBs and PCB items during the calendar year, the total weight in pounds of any solid residues disposed of by the facility in PCB landfills, and the total weight in pounds of any solid residues remaining on the facility site.

(d) When PCBs and PCB items are being incinerated, additional periodic data shall be collected and maintained as specified by the Department pursuant to rule 340-110-070(4)(d).

(e) Upon any suspension of the operation of any incinerator pursuant to rule 340-110-070(1)(h), the owner or operator of such an incinerator shall prepare a document. The document shall, at a minimum, include the date and time of the suspension and an explanation of the circumstances causing the suspension of operation. The document shall be sent to the

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Department within 30 days of any such suspension.

(4) PCB landfill facilities. Each owner or operator of a PCB landfill facility shall collect and maintain until at least 20 years after the PCB landfill is no longer used for the disposal of PCBs the following information in addition to the information required in section (2) of this rule:

(a) Any water analysis obtained in compliance with rule 340-110-075(2)(f)(C); and

(b) Any operations records including burial coordinates of wastes obtained in compliance with rule 340-110-075(2)(h)(B).

(5) High efficiency boiler facilities. Each owner or operator of a high efficiency boiler used for the disposal of liquids between 50 and 500 ppm PCB shall collect and maintain for a period of 5 years the following information, in addition to the information required in section (2) of this rule:

(a) For each month PCBs are burned in the boiler the carbon monoxide and excess oxygen data required in rule 340-110-060(1)(b)(C)(i)(VIII) and (1)(c)(C)(i)(VIII).

(b) The quantity of PCBs burned each month as required in rule 340-110-060(1)(b)(C)(i)(VII) and (1)(c)(C)(i)(VII).

(c) For each month PCBs (other than mineral oil dielectric fluid) are burned, chemical analysis data of the waste as required in rule 340-110-060(1)(c)(C)(ii)(VI).

(6) Retention of special records by storage and disposal facilities. In addition to the information required to be maintained under sections (2) to (5) of this rule, each owner or operator of a PCB storage or disposal facility (including high efficiency boiler operations) shall collect and maintain for the time period specified in section (2) of this rule the following data:

(a) All documents, correspondence and data that have been provided to the owner or operator of the facility by any local, state or federal government agency and that pertain to the storage or disposal of PCBs and PCB items at the facility.

(b) All documents, correspondence and data that have been provided by the owner or operator of the facility to any local, state or federal government agency and that pertain to the storage or disposal of PCBs and PCB items at the facility.

(c) Any applications and related correspondence sent by the owner or operator of the facility to any local, state or federal authorities in regard to wastewater discharge permits, solid waste permits, building permits or other permits or authorizations such as those required by rules 340-110-070(4) and -075(3).

ENERGY CONSERVATION

469.930

(d) Set a reasonable time schedule for effective implementation of the elements set forth in this section.

(2) The commercial energy audit program submitted under subsection (1) of this section shall specify whether the publicly owned utility proposes to charge the customer a fee for the energy audit and, if so, the fee amount. [1981 c.708 §§15, 16]

469.890 Publicly owned utility to adopt commercial energy conservation program; fee. (1) Within 365 days after November 1, 1981, the director shall adopt rules governing energy conservation programs prescribed by ORS 469.895, 469.900 (3) and this section and may provide for coordination among electric utilities and gas utilities that serve the same commercial building. Within 180 days of the adoption of rules by the director, each covered publicly owned utility shall present for the director's approval a commercial energy conservation services program which shall, to the director's satisfaction:

(a) Make information about energy conservation available to all commercial building customers of the covered publicly owned utility, upon request;

(b) Regularly notify all customers in commercial buildings of the availability of the services described in this section; and

(c) Provide to any commercial building customer of the covered publicly owned utility, upon request, an onsite energy audit of the customer's commercial building, including, but not limited to, an estimate of the cost of energy conservation measures.

(2) The programs submitted and approved under this section shall include a reasonable time schedule for effective implementation of the elements set forth in subsection (1) of this section in the service areas of the covered publicly owned utility.

(3) The commercial energy conservation services program submitted under subsections (1) and (2) of this section shall specify whether the covered publicly owned utility proposes to charge the customer a fee for the energy audit and, if so, the fee amount. [1981 c.708 §§18, 19]

469.895 Application of ORS 469.890 to 469.900 to publicly owned utility. (1) ORS 469.890, 469.900 (3) and this section apply in any calendar year to a publicly owned utility only if during the second preceding calendar year sales of electric energy by the publicly owned utility for purposes other than resale exceeded 750 million kilowatt-hours. For the purpose of ORS 469.890,

469.900 (3) and this section, a publicly owned utility with sales for nonresale purposes in excess of 750 million kilowatt-hours during the second preceding calendar year shall be known as a "covered publicly owned utility."

(2) ORS 469.890, 469.900 (3) and this section shall not apply to a covered publicly owned utility if the director determines that its existing commercial energy conservation services program meets or exceeds the requirements of those sections.

(3) Before the beginning of each calendar year, the director shall publish a list identifying each covered publicly owned utility to which ORS 469.890, 469.900 (3) and this section shall apply during that calendar year.

(4) Any covered publicly owned utility is exempt from the requirements of ORS 469.880 and 469.885. [1981 c.708 §17]

469.900 Duty of commissioner to avoid conflict with federal requirements. (1) The commissioner shall insure that each electric utility's commercial energy conservation services program does not conflict with federal statutes and regulations applicable to electric utilities and energy conservation in commercial buildings.

(2) The commissioner shall insure that each gas utility's commercial energy conservation services program does not conflict with federal statutes and regulations applicable to gas utilities and energy conservation in commercial buildings.

(3) The director shall insure that each covered publicly owned utility's commercial energy conservation services program does not conflict with federal statutes and regulations applicable to covered publicly owned utilities and energy conservation in commercial buildings. [1981 c.708 §§5, 10, 20]

Note: 469.900 (1) and (2) were enacted into law by the Legislative Assembly but were not added to or made a part of ORS chapter 469 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

NORTHWEST INTERSTATE COMPACT ON LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT

469.930 Northwest Interstate Compact on Low-Level Radioactive Waste Management. The Northwest Interstate Compact on Low-Level Radioactive Waste Management is enacted into law by the State of Oregon and entered into with all other jurisdictions lawfully joining therein in a form as provided for as follows:

ARTICLE I Policy and Purpose

The party states recognize that low-level radioactive wastes are generated by essential activities and services that benefit the citizens of the states. It is further recognized that the protection of the health and safety of the citizens of the party states and the most economical management of low-level radioactive wastes can be accomplished through cooperation of the states in minimizing the amount of handling and transportation required to dispose of such wastes and through the cooperation of the states in providing facilities that serve the region. It is the policy of the party states to undertake the necessary cooperation to protect the health and safety of the citizens of the party states and to provide for the most economical management of low-level radioactive wastes on a continuing basis. It is the purpose of this compact to provide the means for such a cooperative effort among the party states so that the protection of the citizens of the states and the maintenance of the viability of the states' economies will be enhanced while sharing the responsibilities of radioactive low-level waste management.

ARTICLE II Definitions

As used in this compact:

(1) "Facility" means any site, location, structure or property used or to be used for the storage, treatment or disposal of low-level waste, excluding federal waste facilities.

(2) "Low-level waste" means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities which exceed applicable federal or state standards for unrestricted release. Low-level waste does not include waste containing more than 10 nanocuries of transuranic contaminants per gram of material, nor spent reactor fuel, nor material classified as either high-level waste or waste which is unsuited for disposal by near-surface burial under any applicable federal regulations.

(3) "Generator" means any person, partnership, association, corporation or any other entity whatsoever which, as a part of its activities, produces low-level radioactive waste.

(4) "Host state" means a state in which a facility is located.

ARTICLE III Regulatory Practices

Each party state hereby agrees to adopt practices which will require low-level waste shipments

originating within its borders and destined for a facility within another party state to conform to the applicable packaging and transportation requirements and regulations of the host state. Such practices shall include:

(1) Maintaining an inventory of all generators within the state that have shipped or expect to ship low-level waste to facilities in another party state.

(2) Periodic unannounced inspection of the premises of such generators and the waste management activities thereon.

(3) Authorization of the containers in which such waste may be shipped and a requirement that generators use only that type of container authorized by the state.

(4) Assurance that inspections of the carriers which transport such waste are conducted by proper authorities and appropriate enforcement action is taken for violations.

(5) After receiving notification from a host state that a generator within the party state is in violation of applicable packaging or transportation standards, the party state will take appropriate action to assure that such violations do not recur. Such action may include inspection of every individual low-level waste shipment by that generator.

(6) Each party state may impose fees upon generators and shippers to recover the cost of the inspections and other practices under this Article. Nothing in this Article shall be construed to limit any party state's authority to impose additional or more stringent standards on generators or carriers than those required under this Article.

ARTICLE IV Regional Facilities

(1) Facilities located in any party state, other than facilities established or maintained by individual low-level waste generators for the management of their own low-level waste, shall accept low-level waste generated in any party state if such waste has been packaged and transported according to applicable laws and regulations.

(2) No facility located in any party state may accept low-level waste generated outside of the region comprised of the party states, except as provided in Article V.

(3) Until such time as paragraph (2) of this Article takes effect as provided in Article VI, facilities located in any party state may accept low-level waste generated outside of any of the

party states only if such waste is accompanied by a certificate of compliance issued by an official of the state in which such waste shipment originated. Such certificate shall be in such form as may be required by the host state and shall contain at least the following:

- (a) The generator's name and address;
- (b) A description of the contents of the low-level waste container;
- (c) A statement that the low-level waste being shipped has been inspected by the official who issued the certificate or by an agent of the official or by a representative of the United States Nuclear Regulatory Commission, and found to have been packaged in compliance with applicable federal regulations and such additional requirements as may be imposed by the host state; and
- (d) A binding agreement by the state of origin to reimburse any party state for any liability or expense incurred as a result of an accidental release of such waste, during shipment or after such waste reaches the facility.

(4) Each party state shall cooperate with the other party states in determining the appropriate site of any facility that might be required within the region comprised of the party states, in order to maximize public health and safety while minimizing the use of any one party state as the host of such facilities on a permanent basis. Each party state further agrees that decisions regarding low-level waste management facilities in the region will be reached through a good faith process which takes into account the burdens borne by each of the party states as well as the benefits each has received.

(5) The party states recognize that the issue of hazardous chemical waste management is similar in many respects to that of low-level waste management. Therefore, in consideration of the State of Washington allowing access to its low-level waste disposal facility by generators in other party states, party states such as Oregon and Idaho which host hazardous chemical waste disposal facilities will allow access to such facilities by generators within other party states. Nothing in this compact shall be construed to prevent any party state from limiting the nature and type of hazardous chemical or low-level wastes to be accepted at facilities within its borders or from ordering the closure of such facilities, so long as such action by a host state is applied equally to all generators within the region comprised of the party states.

(6) Any host state may establish a schedule of fees and requirements related to its facility to

assure that closure, perpetual care, and maintenance and contingency requirements are met, including adequate bonding.

ARTICLE V

Northwest Low-Level Waste Compact Committee

The governor of each party state shall designate one official of that state as the person responsible for administration of this compact. The officials so designated shall together comprise the Northwest low-level waste compact committee. The committee shall meet as required to consider matters arising under this compact. The parties shall inform the committee of existing regulations concerning low-level waste management in their states and shall afford all parties a reasonable opportunity to review and comment upon any proposed modifications in such regulations. Notwithstanding any provision of Article IV to the contrary, the committee may enter into arrangements with states, provinces, individual generators or regional compact entities outside the region comprised of the party states for access to facilities on such terms and conditions as the committee may deem appropriate. However, it shall require a two-thirds vote of all such members, including the affirmative vote of the member of any party state in which a facility affected by such arrangement is located, for the committee to enter into such arrangement.

ARTICLE VI

Eligible Parties and Effective Date

(1) Each of the following states is eligible to become a party to this compact: Alaska, Hawaii, Idaho, Montana, Oregon, Utah, Washington and Wyoming. As to any eligible party, this compact shall become effective upon enactment into law by that party, but it shall not become initially effective until enacted into law by two states. Any party state may withdraw from this compact by enacting a statute repealing its approval.

(2) After the compact has initially taken effect pursuant to paragraph (1) of this Article any eligible party state may become a party to this compact by the execution of an executive order by the governor of the state. Any state which becomes a party in this manner shall cease to be a party upon the final adjournment of the next general or regular session of its legislature or July 1, 1983, whichever occurs first, unless the compact has by then been enacted as a statute by that state.

(3) Paragraph (2) of Article IV of this compact shall take effect on July 1, 1983, if consent is given by Congress. As provided in Public Law

96-573, Congress may withdraw its consent to the compact after every five-year period.

ARTICLE VII Severability

If any provision of this compact, or its application to any person or circumstance, is held to be invalid, all other provisions of this compact, and the application of all of its provisions to all other persons and circumstances, shall remain valid; and to this end the provisions of this compact are severable.

[1981 c.479 §1]

469.935 State appointee subject to Senate confirmation. The Oregon appointee to the Northwest Low-Level Waste Compact Committee shall be subject to Senate confirmation pursuant to section 4, Article III of the Oregon Constitution. [1981 c.497 §3]

Note: 469.935 was enacted into law by the Legislative Assembly but was not added to or made a part of ORS chapter 469 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

469.950 Authority to enter into interstate cooperative agreements to control power costs and rates. The State of Oregon shall pursue and may enter into an interstate cooperative agreement with the states of Washington, Idaho and Montana for the purpose of making collective efforts to control Bonneville Power Administration wholesale power costs and rates by studying and developing a region-wide response to:

(1) Federal attempts to increase arbitrarily the interest rates on federal funds previously used to build public facilities in the Pacific Northwest.

(2) Federal initiatives to sell the Bonneville Power Administration.

(3) Bonneville Power Administration rate increase and budget expenditure proposals in excess of their actual needs.

(4) Regional uses of surplus firm power, including uses by existing or newly attracted Pacific Northwest industries, to provide long-term use of the surplus for job development.

(5) Power transmission intertie access. [1985 c.780 §1]

Note: 469.950 was enacted into law by the Legislative Assembly but was not added to or made a part of ORS chapter 469 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

PENALTIES

469.990 Penalties. (1) In addition to any penalties under subsection (2) of this section, a

person who discloses confidential information in violation of ORS 469.090, wilfully or with criminal negligence, as defined by ORS 161.085, may be subject to removal from office or immediate dismissal from public employment.

(2)(a) Wilful disclosure of confidential information in violation of ORS 469.090 is punishable upon conviction, by a fine or not more than \$10,000 or imprisonment for up to one year, or both, for each offense.

(b) Disclosure of confidential information in violation of ORS 469.090 with criminal negligence, as defined by ORS 161.085, is punishable, upon conviction, by a fine of not more than \$1,000 for each offense.

(3) Any person who violates ORS 469.825 commits a Class A misdemeanor. [1975 c.606 §2; subsection (3) enacted as 1981 c.49 §11]

469.992 Civil penalties. (1) A civil penalty in an amount not less than \$1,000 per day nor more than \$25,000 per day for each day of construction or operation in material violation of ORS 469.300 to 469.570, 469.590 to 469.621 and 469.930 or in material violation of any site certificate issued pursuant to ORS 469.300 to 469.570, 469.590 to 469.621 and 469.930 may be assessed by the circuit court.

(2) Violation of an order entered pursuant to ORS 469.550 is punishable upon conviction by a fine of \$50,000. Each day of violation constitutes a separate offense.

(3) A civil penalty in an amount not less than \$100 per day nor more than \$1,000 per day may be assessed by the circuit court for a wilful failure to comply with a subpoena served by the director pursuant to ORS 469.080 (2).

(4) A civil penalty in an amount of not more than \$25,000 per day for each day in violation of any provision of ORS 469.300, 469.530, 469.603 to 469.621 and this section may be assessed by the circuit court upon complaint of the director or of any person injured by the violation. [Formerly 453.994; 1977 c.794 §17; 1981 c.707 §13; 1983 c.273 §4]

469.994 Civil penalty when dealer certificate revoked. (1) The Director of the Department of Energy may impose a civil penalty against a dealer if a final certification or dealer system certification is revoked under ORS 469.180 (1)(b) or (3)(a) or (b). The amount of the penalty shall be equal to the total amount of tax relief estimated to have been provided under ORS 316.116 to purchasers of the system for which a final certificate or dealer's certificate has been

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Subpart D—Storage and Disposal

- 761.60 Disposal requirements.
- 761.65 Storage for disposal.
- 761.70 Incineration.
- 761.75 Chemical waste landfills.
- 761.79 Decontamination.

Subpart E—Exemptions

- 761.80 Manufacturing, processing, and distribution in commerce exemptions.

Subparts F-I—[Reserved]

Subpart J—Records and Reports

- 761.180 Records and monitoring.
- 761.185 Certification program and retention or records by importers and persons generating PCBs in excluded manufacturing processes.
- 761.187 Reporting importers and by persons generating PCBs in excluded manufacturing processes.
- 761.193 Maintenance of monitoring records by persons who import, manufacture, process, distribute in commerce, or use chemicals containing inadvertently generated PCBs.

AUTHORITY: Secs. 6, 8, and 12, Toxic Substances Control Act, 15 U.S.C. 2605, 2607, and 2611.

Subpart A—General

§ 761.1 Applicability.

(a) This part establishes prohibitions of, and requirements for, the manufacture, processing, distribution in commerce, use, disposal, storage, and marking of PCBs and PCB Items.

(b) This part applies to all persons who manufacture, process, distribute in commerce, use, or dispose of PCBs or PCB Items. Substances that are regulated by this rule include, but are not limited to, dielectric fluids, contaminated solvents, oils, waste oils, heat transfer fluids, hydraulic fluids, paints, sludges, slurries, dredge spoils, soils, materials contaminated as a result of spills, and other chemical substances or combination of substances, including impurities and by-products and any byproduct, intermediate or impurity manufactured at any point in a process. Most of the provisions of this part apply to PCBs only if PCBs are present in concentrations above a specified level. For example,

PART 761—POLYCHLORINATED BIPHENYLS (PCBs) MANUFACTURING, PROCESSING, DISTRIBUTION IN COMMERCE, AND USE PROHIBITIONS

Subpart A—General

Sec.

- 761.1 Applicability.
- 761.3 Definitions.
- 761.19 References.

Subpart B—Manufacturing, Processing, Distribution in Commerce, and Use of PCBs and PCB Items

- 761.20 Prohibitions.
- 761.30 Authorizations.

Subpart C—Marking of PCBs and PCB Items

- 761.40 Marking requirements.
- 761.45 Marking formats.

Environmental Protection Agency

Subpart D applies generally to materials at concentrations of 50 parts per million (ppm) and above. Also certain provisions of Subpart B apply to PCBs inadvertently generated in manufacturing processes at concentrations specified in the definition of "PCB" under § 761.3. No provision specifying a PCB concentration may be avoided as a result of any dilution, unless otherwise specifically provided.

(c) Definitions of the terms used in these regulations are in Subpart A. The basic requirements applicable to disposal and marking of PCBs and PCB Items are set forth in Subpart D—Disposal of PCBs and PCB Items and in Subpart C—Marking of PCBs and PCB Items. Prohibitions applicable to PCB activities are set forth in Subpart B—Manufacture, Processing, Distribution in Commerce, and Use of PCBs and PCB Items. Subpart B also includes authorizations from the prohibitions. Subparts C and D set forth the specific requirements for disposal and marking of PCBs and PCB Items.

(d) Section 15 of the Toxic Substances Control Act (TSCA) states that failure to comply with these regulations is unlawful. Section 16 imposes liability for civil penalties upon any person who violates these regulations, and the Administrator can establish appropriate remedies for any violations subject to any limitations included in section 16 of TSCA. Section 16 also subjects a person to criminal prosecution for a violation which is knowing or willful. In addition, section 17 authorizes Federal district courts to enjoin activities prohibited by these regulations, compel the taking of actions required by these regulations, and issue orders to seize PCBs and PCB Items manufactured, processed or distributed in violation of these regulations.

(e) These regulations do not preempt other more stringent Federal statutes and regulations.

(f) Unless and until superseded by any new more stringent regulations issued under EPA authorities, or any permits or any pretreatment requirements issued by EPA, a state or local government that affect release of PCBs to any particular medium:

(1) Persons who inadvertently manufacture or import PCBs generated as unintentional impurities in excluded manufacturing processes, as defined in § 761.3, are exempt from the requirements of Subpart B of this part, provided that such persons comply with Subpart J of this part, as applicable.

(2) Persons who process, distribute in commerce, or use products containing PCBs generated in excluded manufacturing processes defined in § 761.3 are exempt from the requirements of Subpart B provided that such persons comply with Subpart J of this part, as applicable.

(3) Persons who process, distribute in commerce, or use products containing recycled PCBs defined in § 761.3, are exempt from the requirements of Subpart B of this part, provided that such persons comply with Subpart J of this part, as applicable.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605))

[44 FR 31542, May 31, 1979, as amended at 49 FR 28189, July 10, 1984]

§ 761.3 Definitions.

For the purpose of this part:

"Administrator" means the Administrator of the Environmental Protection Agency, or any employee of the Agency to whom the Administrator may either herein or by order delegate his authority to carry out his functions, or any person who shall by operation of law be authorized to carry out such functions.

"Agency" means the United States Environmental Protection Agency.

"Byproduct" means a chemical substance produced without separate commercial intent during the manufacturing or processing of another chemical substance(s) or mixture(s).

"Capacitor" means a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric. Types of capacitors are as follows:

(1) "Small capacitor" means a capacitor which contains less than 1.36 kg (3 lbs.) of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 1,639 cubic centi-

meters (100 cubic inches) may be considered to contain less than 1.36 kgs (3 lbs.) of dielectric fluid and a capacitor whose total volume is more than 3,278 cubic centimeters (200 cubic inches) must be considered to contain more than 1.36 kg (3 lbs.) of dielectric fluid. A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs.).

(2) "Large high voltage capacitor" means a capacitor which contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates at 2,000 volts (a.c. or d.c.) or above.

(3) "Large low voltage capacitor" means a capacitor which contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates below 2,000 volts (a.c. or d.c.).

"Chemical substance", (1) except as provided in paragraph (2) of this definition, means any organic or inorganic substance of a particular molecular identity, including: any combination of such substances occurring in whole or part as a result of a chemical reaction or occurring in nature, and any element or uncombined radical.

(2) Such term does not include: any mixture; any pesticide (as defined in the Federal Insecticide, Fungicide, and Rodenticide Act) when manufactured, processed, or distributed in commerce for use as a pesticide; tobacco or any tobacco product; any source material, special nuclear material, or byproduct material (as such terms are defined in the Atomic Energy Act of 1954 and regulations issued under such Act); any article the sale of which is subject to the tax imposed by section 4181 of the Internal Revenue Code of 1954 (determined without regard to any exemptions from such tax provided by section 4182 or section 4221 or any provisions of such Code); and any food, food additive, drug, cosmetic, or device (as such terms are defined in section 201 of the Federal Food, Drug, and Cosmetic Act) when manufactured, processed, or distributed in commerce for use as a food, food additive, drug, cosmetic, or device.

"Chemical waste landfill" means a landfill at which protection against

risk of injury to health or the environment from migration of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as specified in § 761.75.

"Commerce" means trade, traffic, transportation, or other commerce:

(1) Between a place in a State and any place outside of such State, or

(2) Which affects trade, traffic, transportation, or commerce described in paragraph (1) of this definition.

"Disposal" means intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB Items.

"Distribute in commerce" and "Distribution in Commerce" when used to describe an action taken with respect to a chemical substance, mixture, or article containing a substance or mixture means to sell, or the sale of, the substance, mixture, or article in commerce; to introduce or deliver for introduction into commerce, or the introduction or delivery for introduction into commerce of the substance, mixture, or article; or to hold or the holding of, the substance, mixture, or article after its introduction into commerce.

"Excluded manufacturing process" means a manufacturing process in which quantities of PCBs, as determined in accordance with the definition of inadvertently generated PCBs, calculated as defined, and from which releases to products, air, and water meet the requirements of paragraphs (1) through (5) of this definition, or the importation of products containing PCBs as unintentional impurities, which products meet the requirements of paragraph (1) and (2) of this definition.

(1) The concentration of inadvertently generated PCBs in products leaving any manufacturing site or imported into the United States must have an annual average of less than 25 ppm, with a 50 ppm maximum.

(2) The concentration of inadvertently generated PCBs in the components of detergent bars leaving the manufacturing site or imported into the United States must be less than 5 ppm.

(3) The release of inadvertently generated PCBs at the point at which emissions are vented to ambient air must be less than 10 ppm.

(4) The amount of inadvertently generated PCBs added to water discharged from a manufacturing site must be less than 100 micrograms per resolvable gas chromatographic peak per liter of water discharged.

(5) Disposal of any other process wastes above concentrations of 50 ppm PCB must be in accordance with Subpart D of this part.

"Fluorescent light ballast" means a device that electrically controls fluorescent light fixtures and that includes a capacitor containing 0.1 kg or less of dielectric.

"Impurity" means a chemical substance which is unintentionally present with another chemical substance.

"Incinerator" means an engineered device using controlled flame combustion to thermally degrade PCBs and PCB Items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers.

"Leak" or "leaking" means any instance in which a PCB Article, PCB Container, or PCB Equipment has any PCBs on any portion of its external surface.

"Manufacture" means to produce, manufacture, or import into the customs territory of the United States.

"Manufacturing process" means all of a series of unit operations operating at a site, resulting in the production of a product.

"Mark" means the descriptive name, instructions, cautions, or other information applied to PCBs and PCB Items, or other objects subject to these regulations.

"Marked" means the marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any

other method that meets the requirements of these regulations.

"Mixture" means any combination of two or more chemical substances if the combination does not occur in nature and is not, in whole or in part, the result of a chemical reaction; except that such term does include any combination which occurs, in whole or in part, as a result of a chemical reaction if none of the chemical substances comprising the combination is a new chemical substance and if the combination could have been manufactured for commercial purposes without a chemical reaction at the time the chemical substances comprising the combination were combined.

"Municipal solid wastes" means garbage, refuse, sludges, wastes, and other discarded materials resulting from residential and non-industrial operations and activities, such as household activities, office functions, and commercial housekeeping wastes.

"PCB" and "PCBs" means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance. Refer to § 761.1(b) for applicable concentrations of PCBs. PCB and PCBs as contained in PCB items are defined in § 761.3. For any purposes under this part, inadvertently generated non-Aroclor PCBs are defined as the total PCBs calculated following division of the quantity of monochlorinated biphenyls by 50 and dichlorinated biphenyls by 5.

"PCB Article" means any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB Article" includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB Article.

"PCB Article Container" means any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB Articles or PCB Equipment, and whose surface(s) has not been in direct contact with PCBs.

"PCB Container" means any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) has been in direct contact with PCBs.

"PCB Equipment" means any manufactured item, other than a PCB Container or a PCB Article Container, which contains a PCB Article or other PCB Equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.

"PCB Item" is defined as any PCB Article, PCB Article Container, PCB Container, or PCB Equipment, that deliberately or unintentionally contains or has a part of it any PCB or PCBs.

"PCB Transformer" means any transformer that contains 500 ppm PCB or greater.

"PCB-Contaminated Electrical Equipment" means any electrical equipment, including but not limited to transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, and cable, that contain 50 ppm or greater PCB, but less than 500 ppm PCB. Oil-filled electrical equipment other than circuit breakers, reclosers, and cable whose PCB concentration is unknown must be assumed to be PCB-Contaminated Electrical Equipment. (See § 761.30 (a) and (h) for provisions permitting reclassification of electrical equipment containing 500 ppm or greater PCBs to PCB-Contaminated Electrical Equipment).

"Person" means any natural or judicial person including any individual, corporation, partnership, or association; any State or political subdivision thereof; any interstate body; and any department, agency, or instrumentality of the Federal Government.

"Posing an exposure risk to food or feed" means being in any location where human food or animal feed

products could be exposed to PCBs released from a PCB Item. A PCB Item poses an exposure risk to food or feed if PCBs released in any way from the PCB Item have a potential pathway to human food or animal feed. EPA considers human food or animal feed to include items regulated by the U.S. Department of Agriculture or the Food and Drug Administration as human food or animal feed; this includes direct additives. Food or feed is excluded from this definition if it is used or stored in private homes.

"Process" means the preparation of a chemical substance or mixture, after its manufacture, for distribution in commerce:

(1) In the same form or physical state as, or in a different form or physical state from, that in which it was received by the person so preparing such substance or mixture, or

(2) As part of an article containing the chemical substance or mixture.

"Qualified incinerator" means one of the following:

(1) An incinerator approved under the provisions of § 761.70. Any concentration of PCBs can be destroyed in an incinerator approved under § 761.70.

(2) A high efficiency boiler approved under the provisions of § 761.60(a)(3). Only PCBs in concentrations below 500 ppm can be destroyed in a high-efficiency boiler approved under § 761.60(a)(3).

(3) An incinerator approved under section 3005(c) of the Resource Conservation and Recovery Act (42 U.S.C. 6925(c)) (RCRA). Only PCBs in concentrations below 50 ppm can be destroyed in a RCRA-approved incinerator. The manufacturer seeking to qualify a process as a controlled waste process by disposing of wastes in a RCRA-approved incinerator must make a determination that the incinerator is capable of destroying less readily burned compounds than the PCB homologs to be destroyed. The manufacturer may use the same guidance used by EPA in making such a determination when issuing an approval under section 3005(c) of RCRA. The manufacturer is also responsible for obtaining a reasonable assurance that the incinerator, when burning PCB wastes, will be operated under condi-

tions which have been shown to enable the incinerator to destroy the less readily burned compounds.

"Recycled PCBs" are defined as those intentionally manufactured PCBs which appear in the processing of paper products or asphalt roofing materials as PCB-contaminated raw materials and which meet the requirements of (1) through (5) of this definition.

(1) The concentration of Aroclor PCBs in paper products leaving any manufacturing site or imported into the United States must have an annual average of less than 25 ppm with a 50 ppm maximum.

(2) There are no detectable concentrations of Aroclor PCBs in asphalt roofing materials.

(3) The release of Aroclor PCBs at the point at which emissions are vented to ambient air must be less than 10 ppm.

(4) The amount of Aroclor PCBs added to water discharged from a processing site must at all times be less than 3 micrograms per liter ($\mu\text{g}/\text{l}$) for total Aroclors (roughly 3 parts per billion (3 ppb)).

(5) Disposal of any other process wastes above concentrations of 50 ppm PCB must be in accordance with Subpart D of this part.

"Sale for purposes other than resale" means sale of PCBs for purposes of disposal and for purposes of use, except where use involves sale for distribution in commerce. PCB Equipment which is first leased for purposes of use any time before July 1, 1979, will be considered sold for purposes other than resale.

"Small quantities for research and development" means any quantity of PCBs (1) that is originally packaged in one or more hermetically sealed containers of a volume of no more than five (5.0) milliliters, and (2) that is used only for purposes of scientific experimentation or analysis, or chemical research on, or analysis of, PCBs, but not for research or analysis for the development of a PCB product.

"Storage for disposal" means temporary storage of PCBs that have been designated for disposal.

"Transport vehicle" means a motor vehicle or rail car used for the trans-

portation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle.

"Totally enclosed manner" means any manner that will ensure no exposure of human beings or the environment to any concentration of PCBs.

"Waste Oil" means used products primarily derived from petroleum, which include, but are not limited to, fuel oils, motor oils, gear oils, cutting oils transmission fluids, hydraulic fluids, and dielectric fluids.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[49 FR 25239, June 20, 1984, as amended at 49 FR 28189, July 10, 1984; 49 FR 29066, July 18, 1984; 49 FR 44638, Nov. 8, 1984]

§ 761.19 References.

(a) [Reserved]

(b) *Incorporations by reference.* The following material is incorporated by reference, and is available for inspection at the Office of the Federal Register Information Center, Rm. 8301, 1100 L St. NW., Washington, DC 20408. These incorporations by reference were approved by the Director of the Office of the Federal Register. These materials are incorporated as they exist on the date of approval and a notice of any change in these materials will be published in the FEDERAL REGISTER. Copies of the incorporated material may be obtained from the Environmental Protection Agency Document Control Officer (TS-793), Office of Pesticides and Toxic Substances, EPA, Rm. 106, 401 M St., SW., Washington, D.C. 20460, and from the American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103.

References	CFR Citation
ASTM D-93-80 Standard Test Method for Flash Point by Pensky-Martens Closed Tester.	§ 761.60(a)(3)(iii)(B)(6); § 761.75(b)(8)(iii).
ASTM D-129-64 (Reapproved 1978) Standard Test Method for Sulfur in Petroleum Products (General Bomb Method).	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-240-76 (Reapproved 1980) Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuel by Bomb Calorimeter.	§ 761.60(a)(3)(iii)(B)(6).

§ 761.20

References	CFR Citation
ASTM D-462-80 Standard Test Method for Ash from Petroleum Products.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-524-81 Standard Test Method for Ramsbottom Carbon Residue of Petroleum Products.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-808-81 Standard Test Method for Chlorine in New and Used Petroleum Products (Bomb Method).	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-923-81 Standard Test Method for Sampling Electrical Insulating Liquids.	§ 761.60(g)(1)(ii); § 761.60(g)(2)(ii).
ASTM D-1266-80 (Reapproved 1981) Standard Test Method for Sulfur in Petroleum Products (Lamp Method).	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-1796-83 (Reapproved 1977) Methods for Water and Sediment in Crude Oils and Fuel Oils by Centrifuge.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-2158-80 Standard Test Method for Residues in Liquefied Petroleum (LP) Gas.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-2709-68 (Reapproved 1982) Standard Test Method for Water and Sediment in Distillate Fuel by Centrifuge.	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-2784-80 Standard Test Method for Sulfur in Liquefied Petroleum Gases (Oxyhydrogen Burner or Lamp).	§ 761.60(a)(3)(iii)(B)(6).
ASTM D-3176-73 (Reapproved 1979) Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coke and Coal.	§ 761.75(b)(8)(iii).
ASTM D-3278-78 (Reapproved 1982) Standard Test Methods for Flash Point of Liquid by Setflash Closed Tester.	§ 761.60(a)(3)(iii)(B)(6).
ASTM E-258-67 (Reapproved 1982) Standard Test Method for Total Nitrogen Inorganic Material by Modified KJELDAHL Method.	§ 761.60(a)(3)(iii)(B)(6).

[47 FR 22098, May 21, 1982, as amended at 49 FR 29067, July 18, 1984; 49 FR 36648, Sept. 19, 1984]

Subpart B—Manufacturing, Processing, Distribution in Commerce, and Use of PCBs and PCB Items

§ 761.20 Prohibitions.

Except as authorized in § 761.30, the activities listed in paragraphs (a) and (d) of this section are prohibited pursuant to section 6(e)(2) of TSCA. The requirements set forth in paragraphs (b) and (c) of this section concerning export and import of PCBs for purposes of disposal and PCB Items for purposes of disposal are established pursuant to section 6(e)(1) of TSCA. Subject to any exemptions granted

pursuant to section 6(e)(3)(B) of TSCA, the activities listed in paragraphs (b) and (c) of this section are prohibited pursuant to section 6(e)(3)(A) of TSCA. In addition, the Administrator hereby finds, under the authority of section 12(a)(2) of TSCA, that the manufacture, processing, and distribution in commerce of PCBs at concentrations of 50 ppm or greater and PCB Items with PCB concentrations of 50 ppm or greater present an unreasonable risk of injury to health within the United States. This finding is based upon the well-documented human health and environmental hazard of PCB exposure, the high probability of human and environmental exposure to PCBs and PCB Items from manufacturing, processing, or distribution activities; the potential hazard of PCB exposure posed by the transportation of PCBs or PCB Items within the United States; and the evidence that contamination of the environment by PCBs is spread far beyond the areas where they are used. In addition, the Administrator hereby finds, for purposes of section 6(e)(2)(C) of TSCA, that any exposure of human beings or the environment to PCBs, as measured or detected by any scientifically acceptable analytical method, may be significant, depending on such factors as the quantity of PCBs involved in the exposure, the likelihood of exposure to humans and the environment, and the effect of exposure. For purposes of determining which PCB Items are totally enclosed, pursuant to section 6(e)(2)(C) of TSCA, since exposure to such Items may be significant, the Administrator further finds that a totally enclosed manner is a manner which results in no exposure to humans or the environment to PCBs. The following activities are considered totally enclosed: distribution in commerce of intact, nonleaking electrical equipment such as transformers (including transformers used in railway locomotives and self-propelled cars), capacitors, electromagnets, voltage regulators, switches (including sectionalizers and motor starters), circuit breakers, reclosers, and cable that contain PCBs at any concentration and processing and distribution in commerce of PCB Equip-

ment containing an intact, nonleaking PCB Capacitor. See paragraph (c)(1) of this section for provisions allowing the distribution in commerce of PCBs and PCB Items.

(a) No person may use any PCB, or any PCB Item regardless of concentration, in any manner other than in a totally enclosed manner within the United States unless authorized under § 761.30, except that an authorization is not required to use those PCBs or PCB Items resulting from an excluded manufacturing process or recycled PCBs defined in § 761.3, provided all applicable conditions of § 761.1(f) are met.

(b) No person may manufacture PCBs for use within the United States or manufacture PCBs for export from the United States without an exemption except that:

(1) No person may manufacture PCBs for use within the United States or manufacture PCBs for export from the United States without an exemption, except that an exemption is not required for PCBs manufactured in an excluded manufacturing process as defined in § 761.3, provided that all applicable conditions of § 761.1(f) are met.

(2) PCBs at concentrations less than 50 ppm may be imported or exported for purposes of disposal.

(c) No person may process or distribute in commerce any PCB, or any PCB Item regardless of concentration, for use within the United States or for export from the United States without an exemption, except that an exemption is not required to process or distribute in commerce PCBs or PCB Items resulting from an excluded manufacturing process as defined in § 761.3, or to process or distribute in commerce recycled PCBs as defined in § 761.3 provided that all applicable conditions of § 761.1(f) are met.

(1) PCBs at concentrations of 50 ppm or greater, or PCB Items with PCB concentrations of 50 ppm or greater, sold before July 1, 1979 for purposes other than resale may be distributed in commerce only in a totally enclosed manner after that date.

(2) PCBs at concentrations of 50 ppm or greater, or PCB Items with PCB concentrations of 50 ppm or

greater may be processed and distributed in commerce in compliance with the requirements of this Part for purposes of disposal in accordance with the requirements of § 761.60.

(3) PCBs or PCB Items may be exported for disposal until May 1, 1980, if an export notice is submitted at least thirty (30) days before the first shipment in any calendar year leaves the customs territory of the United States. Export notices must be submitted to the Document Control Officer (TS-793), Office of Toxic Substances, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460. The generator of the PCB waste material intended for disposal, or an agent acting on his behalf, must certify to the best of his knowledge and belief that the information is complete and accurate. Each notice should contain the following information:

(i) Name, company name, address, and telephone number of the owner of the PCB waste material to be exported and the name and address of any person or agent acting on his behalf;

(ii) Estimated quantity of wastes to be shipped during the calendar year and the estimated number of shipments to be made and the dates when such shipments are expected to leave the customs territory of the United States;

(iii) Description of the PCBs or PCB Items being exported;

(iv) Country(s) of destination for the shipments;

(v) Name and address of facility(s) receiving the shipment and person(s) responsible for receiving the shipment(s).

(vi) Method(s) of disposal and precautions taken to control release into the environment.

(vii) No less than 30 days after the end of each calendar quarter (March 31, June 30, September 30, and December 31) during which PCBs were exported for disposal, each person exporting the PCBs must submit a report to the Document Control Officer (TS-793), Office of Toxic Substances, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460. The report shall list the quantity of PCB wastes

in each shipment made during the quarter and include the date when each shipment left the customs territory of the United States and the information specified in paragraphs (c)(3)(i) and (iii) through (vi) of this section. If the quantity of wastes shipped during the calendar year exceeds by 25 percent or more the estimated quantities reported in paragraph (c)(3)(ii) of this section, a special export notice must be submitted to the Document Control Officer (TS-793) at the address given in paragraph (c)(3) at least 30 days before any additional shipments leave the customs territory of the United States and the notice shall include the information specified in paragraphs (c)(3) (i) through (vi) of this section.

(viii) Any person expecting to export PCB wastes for disposal in calendar year 1980 must submit an export notice at least thirty (30) days before the first shipment leaves the customs territory of the United States to the Document Control Officer (TS-793) at the address given in paragraph (c)(3) of this section, and the notice shall contain the information listed in paragraphs (c)(3) (i) through (vi) of this section.

(4) PCBs, at concentrations of less than 50 ppm, or PCB Items, with concentrations of less than 50 ppm, may be processed and distributed in commerce for purposes of disposal.

(d) The use of waste oil that contains any detectable concentration of PCB as a sealant, coating, or dust control agent is prohibited. Prohibited uses include, but are not limited to, road oiling, general dust control, use as a pesticide or herbicide carrier, and use as a rust preventative on pipes.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020, (15 U.S.C. 2605)

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at 49 FR 25241, June 20, 1984; 49 FR 28190, July 10, 1984; 49 FR 44638, Nov. 8, 1984]

§ 761.30 Authorizations.

The following non-totally enclosed PCB activities are authorized pursuant to section 6(e)(2)(B) of TSCA:

(a) *Use in and servicing of transformers (other than railroad transformers).* PCBs at any concentration

may be used in transformers (other than transformers for railroad locomotives and self-propelled railroad cars) and may be used for purposes of servicing including rebuilding these transformers for the remainder of their useful lives, subject to the following conditions:

(1) *Use conditions.* (i) After October 1, 1985, the use and storage for reuse of PCB Transformers that pose an exposure risk to food or feed is prohibited.

(ii) A visual inspection of each PCB Transformer (as defined in the definition of "PCB Transformer" under § 761.3) in use or stored for reuse shall be performed at least once every three months. These inspections may take place any time during the three month periods; January-March, April-June, July-September, and October-December as long as there is a minimum of 30 days between inspections. The visual inspection must include investigation for any leak of dielectric fluid on or around the transformer. The extent of the visual inspections will depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer being inspected.

(iii) If a PCB Transformer is found to have a leak which results in any quantity of PCBs running off or about to run off the external surface of the transformer, then the transformer must be repaired or replaced to eliminate the source of the leak. In all cases any leaking material must be cleaned up and properly disposed of according to disposal requirements of § 761.60. Cleanup of the released PCBs must be initiated as soon as possible, but in no case later than 48 hours of its discovery. Until appropriate action is completed, any active leak of PCBs must be contained to prevent exposure of humans or the environment and inspected daily to verify containment of the leak. Trenches, dikes, buckets, and pans are examples of proper containment measures.

(iv) Records of inspection and maintenance history shall be maintained at least 3 years after disposing of the transformer and shall be made available for inspection, upon request, by

EPA. Such records shall contain the following information for each PCB Transformer:

(A) Its location.

(B) The date of each visual inspection and the date that a leak was discovered, if different from the inspection date.

(C) The person performing the inspection.

(D) The location of any leak(s).

(E) An estimate of the amount of dielectric fluid released from any leak.

(F) The date of any cleanup, containment, repair, or replacement.

(G) A description of any cleanup, containment, or repair performed.

(H) The results of any containment and daily inspection required for uncorrected active leaks.

(v) A reduced visual inspection frequency of at least once every 12 months applies to PCB Transformers that utilize either of the following risk reduction measures. These inspections may take place any time during the calendar year as long as there is a minimum of 180 days between inspections.

(A) A PCB Transformer which has impervious, undrained, secondary containment capacity of at least 100 percent of the total dielectric fluid volume of all transformers so contained, or

(B) A PCB Transformer which has been tested and found to contain less than 60,000 ppm PCBs (after three months of in-service use if the transformer has been serviced for purposes of reducing the PCB concentration).

(vi) An increased visual inspection frequency of at least once every week applies to any PCB Transformer in use or stored for reuse which poses an exposure risk to food or feed. The user of a PCB Transformer posing an exposure risk to food or feed is responsible for the inspection, recordkeeping, and maintenance requirements under this section until the user notifies the owner that the transformer may pose an exposure risk to food or feed. Following such notification, it is the owner's ultimate responsibility to determine whether the PCB Transformer poses an exposure risk to food or feed.

(2) *Servicing conditions.* (i) Transformers classified as PCB-Contaminat-

ed Electrical Equipment (as defined in the definition of "PCB-Contaminated Electrical Equipment" under § 761.3) may be serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB.

(ii) Any servicing (including rebuilding) of PCB Transformers (as defined in the definition of "PCB Transformer" under § 761.3) that requires the removal of the transformer coil from the transformer casing is prohibited. PCB Transformers may be serviced (including topping off) with dielectric fluid at any PCB concentration.

(iii) PCBs removed during any servicing activity must be captured and either reused as dielectric fluid or disposed of in accordance with the requirements of § 761.60. PCBs from PCB Transformers must not be mixed with or added to dielectric fluid from PCB-Contaminated Electrical Equipment.

(iv) Regardless of its PCB concentration, dielectric fluids containing less than 500 ppm PCB that are mixed with fluids that contain 500 ppm or greater PCB must not be used as dielectric fluid in any electrical equipment. The entire mixture of dielectric fluid must be considered to be greater than 500 ppm PCB and must be disposed of in an incinerator that meets the requirements in § 761.70.

(v) A PCB Transformer may be converted to PCB-Contaminated Electrical Equipment or to a non-PCB Transformer and a transformer that is classified as PCB-Contaminated Electrical Equipment may be reclassified to a non-PCB Transformer by draining, refilling and/or otherwise servicing the transformer. In order to reclassify, the transformer's dielectric fluid must contain less than 500 ppm PCB (for conversion to PCB-Contaminated Electrical Equipment) or less than 50 ppm PCB (for conversion to a non-PCB Transformer) after a minimum of three months of in-service use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the transformer. In-service means that the transformer is used electrically under loaded conditions that raise the temperature of the dielectric fluid to at least 50° Centigrade. The Assistant Administrator

may grant, without further rulemaking, approval for the use of alternative methods that simulate the loaded conditions of in-service use. All PCBs removed from transformers for purposes of reducing PCB concentrations are subject to the disposal requirements of § 761.60.

(vi) Any dielectric fluid containing 50 ppm or greater PCB used for servicing transformers must be stored in accordance with the storage for disposal requirements of § 761.65.

(vii) Processing and distribution in commerce of PCBs for purposes of servicing transformers is permitted only for persons who are granted an exemption under TSCA 6(e)(3)(B).

(b) *Use in and servicing of railroad transformers.* PCBs may be used in transformers in railroad locomotives or railroad self-propelled cars ("railroad transformers") and may be processed and distributed in commerce for purposes of servicing these transformers in a manner other than a totally enclosed manner subject to the following conditions:

(1) *Use restrictions.* (i) After July 1, 1983, the number of railroad transformers containing a PCB concentration greater than 60,000 ppm (6.0 percent on a dry weight basis) in use by any affected railroad organization may not exceed two-thirds of the total railroad transformers containing PCBs in use by that organization on January 1, 1982.

(ii) After January 1, 1984, the number of railroad transformers containing a PCB concentration greater than 60,000 ppm in use by any affected railroad organization may not exceed one-third of the total railroad transformers containing PCBs in use by that organization on January 1, 1982.

(iii) After July 1, 1984, use of railroad transformers that contain dielectric fluids with a PCB concentration greater than 60,000 ppm is prohibited.

(iv) After July 1, 1985, the number of railroad transformers containing a PCB concentration greater than 1,000 ppm (0.1 percent on a dry weight basis) in use by any affected railroad organization may not exceed two-thirds of the total railroad transform-

ers containing PCBs in use by that organization on July 1, 1984.

(v) After January 1, 1986, the number of railroad transformers containing a PCB concentration greater than 1,000 ppm in use by any affected railroad organization may not exceed one-third of the total railroad transformers containing PCBs in use by that organization on July 1, 1984.

(vi) After July 1, 1986, use of railroad transformers that contain dielectric fluids with a PCB concentration greater than 1,000 ppm is prohibited.

(vii) The concentration of PCBs in the dielectric fluid contained in railroad transformers must be measured:

(A) Immediately upon completion of any authorized servicing of a railroad transformer conducted for the purpose of reducing the PCB concentration in the dielectric fluid in the transformer, and

(B) Between 12 and 24 months after each servicing conducted in accordance with paragraph (b)(1)(vii)(A) of this section;

(C) The data obtained as a result of paragraphs (b)(1)(vii) (A) and (B) of this section shall be retained until January 1, 1991.

(2) *Servicing restrictions.* (i) If the coil is removed from the casing of a railroad transformer (e.g., the transformer is rebuilt), after January 1, 1982, the railroad transformer may not be refilled with dielectric fluid containing a PCB concentration greater than 50 ppm;

(ii) After January 1, 1982, railroad transformers may only be serviced with dielectric fluid containing less than 60,000 ppm PCBs, except as provided in paragraph (b)(2)(i) of this section;

(iii) After January 1, 1984, railroad transformers may only be serviced with dielectric fluid containing less than 1000 ppm PCB, except as provided in paragraph (b)(2)(i) of this section;

(iv) Dielectric fluid may be filtered through activated carbon or otherwise industrially processed for the purpose of reducing the PCB concentration in the fluid;

(v) Any PCB dielectric fluid that is used to service PCB railroad transformers must be stored in accordance

with the storage for disposal requirements of § 761.65;

(vi) After July 1, 1979, processing and distribution in commerce of PCBs for purposes of servicing railroad transformers is permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(vii) A PCB Transformer may be converted to a PCB-Contaminated Transformer or to a non-PCB Transformer by draining, refilling, and/or otherwise servicing the railroad transformer. In order to reclassify, the railroad transformer's dielectric fluid must contain less than 500 ppm (for conversion to PCB-Contaminated Transformer) or less than 50 ppm PCB (for conversion to a non-PCB Transformer) after a minimum of three months of in-service use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the transformer.

(c) *Use in and servicing of mining equipment.* PCBs may be used in mining equipment and may be processed and distributed in commerce for purposes of servicing mining equipment in a manner other than a totally enclosed manner until January 1, 1982, subject to the following conditions:

(1) PCBs may be added to motors in mining equipment in mines or mining areas until January 1, 1982;

(2) PCB motors in loader-type mining equipment must be rebuilt as air-cooled or other non-PCB-containing motors whenever the motor is returned to a service shop for servicing;

(3) PCB motors in continuous miner-type equipment may be rebuilt as PCB motors until January 1, 1980;

(4) Any PCBs that are on hand to service or repair mining equipment must be stored in accordance with the storage for disposal requirements of § 761.65;

(5) After July 1, 1979, processing and distribution in commerce of PCBs for purposes of servicing mining equipment is permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(d) *Use in heat transfer systems.* After July 1, 1984, intentionally manufactured PCBs may be used in heat transfer systems in a manner other

than a totally enclosed manner at a concentration level of less than 50 ppm provided that the requirements of paragraphs (d) (1) through (7) of this section are met.

(1) Each person who owns a heat transfer system that ever contained PCBs at concentrations above 50 ppm must test for the concentration of PCBs in the heat transfer fluid of such a system no later than November 1, 1979, and at least annually thereafter. All test sampling must be performed at least three months after the most recent fluid refilling. When a test shows that the PCB concentration is less than 50 ppm, testing under this paragraph is no longer required.

(2) Within six months of a test performed under paragraph (d)(1) of this section that indicates that a system's fluid contains 50 ppm or greater PCB (0.005% on a dry weight basis), the system must be drained of the PCBs and refilled with fluid containing less than 50 ppm PCB. Topping-off with heat transfer fluids containing PCB concentrations of less than 50 ppm is permitted.

(3) After November 1, 1979, no heat transfer system that is used in the manufacture or processing of any food, drug, cosmetic or device, as defined in section 201 of the Federal Food, Drug, and Cosmetic Act, may contain transfer fluid with 50 ppm or greater PCB (0.005% on a dry weight basis).

(4) Addition of fluids containing PCB concentrations greater than 50 ppm is prohibited.

(5) Data obtained as a result of paragraph (d)(1) of this section must be retained for five years after the heat transfer system reaches 50 ppm PCB.

(6) Each person who owns a heat transfer system that contains PCBs must provide workers with gloves made of viton elastomer to protect workers from dermal exposure to PCBs.

(7) All persons who maintain a heat transfer system must wear viton elastomer gloves while doing maintenance work on that system.

(e) *Use in hydraulic systems.* After July 1, 1984, intentionally manufactured PCBs may be used in hydraulic systems in a manner other than a to-

tally enclosed manner at a concentration level of less than 50 ppm provided that the requirements in paragraphs (e) (1) through (7) of this section are met.

(1) Each person who owns a hydraulic system that ever contained PCBs at concentrations above 50 ppm must test for the concentration of PCBs in the hydraulic fluid of each system no later than November 1, 1979, and at least annually thereafter. All test sampling must be performed at least three months after the most recent fluid refilling. When a test shows that the PCB concentration is less than 50 ppm, testing under this paragraph is no longer required.

(2) Within six months of a test under paragraph (e)(1) of this section that indicates that a system's fluid contains 50 ppm or greater PCB (0.005% on a dry weight basis), the system must be drained of the PCBs and refilled with fluid containing less than 50 ppm PCB. Topping-off with hydraulic fluids containing PCB concentrations less than 50 ppm to reduce PCB concentrations is permitted.

(3) Addition of PCBs at concentrations of greater than 50 ppm is prohibited.

(4) Hydraulic fluid may be drained from a hydraulic system and filtered, distilled, or otherwise serviced in order to reduce the PCB concentration below 50 ppm.

(5) Data obtained as a result of paragraph (e)(1) of this section must be retained for five years after the hydraulic system reaches 50 ppm.

(6) Each person who owns a hydraulic system that contains PCBs must provide gloves made of viton elastomer to protect workers from dermal exposure to PCBs.

(7) All persons who maintain a hydraulic system that contains PCBs must wear viton elastomer gloves while doing maintenance work on that system.

(f) *Use in carbonless copy paper.* Carbonless copy paper containing PCBs may be used in a manner other than a totally enclosed manner indefinitely.

(g) *Pigments.* Diarylide and Phthalocyanin pigments that contain 50 ppm or greater PCB may be processed, dis-

tributed in commerce, and used in a manner other than a totally enclosed manner until January 1, 1982, except that after July 1, 1979, processing and distribution in commerce of diarylide or phthalocyanin pigments that contain 50 ppm or greater PCB is permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(h) *Use in and servicing of electromagnets, switches and voltage regulators.* PCBs at any concentration may be used in electromagnets, switches (including sectionalizers and motor starters), and voltage regulators and may be used for purposes of servicing this equipment (including rebuilding) for the remainder of their useful lives, subject to the following conditions:

(1) *Use conditions.* (i) After October 1, 1985, the use and storage for reuse of any electromagnet which poses an exposure risk to food or feed is prohibited if the electromagnet contains greater than 500 ppm PCBs.

(ii) A visual inspection of each electromagnet subject to paragraph (h)(1)(i) shall be performed at least once every week according to the conditions contained in § 761.30(a)(1)(iii) and (iv).

(2) *Servicing conditions.* (i) Servicing (including rebuilding) any electromagnet, switch, or voltage regulator with a PCB concentration of 500 ppm or greater which requires the removal and rework of the internal components is prohibited.

(ii) Electromagnets, switches, and voltage regulators classified as PCB-Contaminated Electrical Equipment (as defined in the definition of "PCB-Contaminated Electrical Equipment" under § 761.3) may be serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB.

(iii) PCBs removed during any servicing activity must be captured and either reused as dielectric fluid or disposed of in accordance with the requirements of § 761.60. PCBs from electromagnets switches, and voltage regulators with a PCB concentration of at least 500 ppm must not be mixed with or added to dielectric fluid from PCB-Contaminated Electrical Equipment.

(iv) Regardless of its PCB (concentration, dielectric fluids containing less than 500 ppm PCB) that are mixed with fluids that contain 500 ppm or greater PCB must not be used as dielectric fluid in any electrical equipment. The entire mixture of dielectric fluid must be considered to be greater than 500 ppm PCB and must be disposed of in an incinerator that meets the requirements of § 761.70.

(v) An electromagnet, switch or voltage regulator with a PCB concentration of at least 500 ppm may be converted to PCB-Contaminated Electrical Equipment or to a non-PCB classification and PCB-Contaminated Electrical Equipment may be reclassified to a non-PCB classification by draining, refilling and/or otherwise servicing the equipment. In order to be reclassified, the equipment's dielectric fluid must contain less than 500 ppm PCB (for conversion to PCB-Contaminated Electrical Equipment) or less than 50 ppm PCB (for conversion to a non-PCB classification) after a minimum of three months of in-service use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the equipment. In-service use means the equipment is used electrically under loaded conditions. The Assistant Administrator may grant, without further rulemaking, approval for the use of alternative methods that simulate the loaded conditions of in-service use. All PCBs removed from this equipment for purposes of reducing PCB concentrations are subject to the disposal requirements of § 761.60.

(vi) Any dielectric fluid containing 50 ppm or greater PCB used for servicing electromagnets, switches, or voltage regulators must be stored in accordance with the storage for disposal requirements of § 761.65.

(vii) Processing and distribution in commerce of PCBs for purposes of servicing electromagnets, switches or voltage regulators is permitted only for persons who are granted an exemption under TSCA 6(e)(3)(B).

(i) *Use in compressors and in the liquid of natural gas pipelines.* PCBs may be used indefinitely in the compressors and in the liquids of natural gas pipelines at a concentration level

of less than 50 ppm provided that they are marked in accordance with § 761.45(a).

(j) *Small quantities for research and development.* PCBs may be used in small quantities for research and development, as defined in § 761.3(ee), in a manner other than a totally enclosed manner, indefinitely. Manufacture, processing, and distribution in commerce of PCBs in small quantities for research and development is permitted only for persons who have been granted an exemption under TSCA section 6(e)(3)(B).

(k) *Microscopy mounting medium.* PCBs may be used as a permanent microscopic mounting medium in a manner other than a totally enclosed manner indefinitely. Manufacture, processing, and distribution in commerce of PCBs for purposes of use as a mounting medium are permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(l) *Use in capacitors.* PCBs at any concentration may be used in capacitors, subject to the following conditions:

(1) *Use conditions.* (i) After October 1, 1988, the use and storage for reuse of PCB Large High Voltage Capacitors and PCB Large Low Voltage Capacitors which pose an exposure risk to food or feed is prohibited.

(ii) After October 1, 1988, the use of PCB Large High Voltage Capacitors and PCB Large Low Voltage Capacitors is prohibited unless the capacitor is used within a restricted-access electrical substation or in a contained and restricted-access indoor installation. A restricted-access electrical substation is an outdoor, fenced or walled-in facility that restricts public access and is used in the transmission or distribution of electric power. A contained and restricted-access indoor installation does not have public access and has an adequate roof, walls, and floor to contain any release of PCBs within the indoor location.

(m) *Use in and servicing of circuit breakers, reclosers and cable.* PCBs at any concentration may be used in circuit breakers, reclosers, and cable and may be used for purposes of servicing this electrical equipment (including re-

building) for the remainder of their useful lives, subject to the following conditions:

(1) *Servicing conditions.* (i) Circuit breakers, reclosers, and cable may be serviced (including rebuilding) only with dielectric fluid containing less than 50 ppm PCB.

(ii) Any circuit breaker, recloser or cable found to contain at least 50 ppm PCBs may be serviced only in accordance with the conditions contained in 40 CFR 761.30(h)(2).

(n) *Microscopy immersion oil.* PCBs may be used as an immersion oil in fluorescence microscopy, in a manner other than a totally enclosed manner indefinitely. Manufacture, processing, and distribution in commerce of PCBs for purposes of use as a low fluorescence immersion oil are permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(o) *Optical liquids.* PCBs may be used as optical liquids in a manner other than a totally enclosed manner indefinitely. Manufacture, processing, and distribution in commerce of PCBs for purposes of use as optical liquids are permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

(Approved by the Office of Management and Budget under control number 2070-0003)

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020, 2025 (15 U.S.C. 2605))

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at 47 FR 37357, Aug. 25, 1983; 48 FR 135, Jan. 3, 1983; 49 FR 25241 and 25242, June 20, 1984; 49 FR 28190, and 28202, July 10, 1984]

Subpart C—Marking of PCBs and PCB Items

§ 761.40 Marking requirements.

(a) Each of the following items in existence on or after July 1, 1978 shall be marked as illustrated in Figure 1 in § 761.44(a): The mark illustrated in Figure 1 is referred to as M_L through-out this subpart.

(1) PCB Containers;

(2) PCB Transformers at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal

from use if not already marked. [Marking of PCB-Contaminated Electrical Equipment is not required];

(3) PCB Large High Voltage Capacitors at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal from use if not already marked;

(4) Equipment containing a PCB Transformer or a PCB Large High Voltage Capacitor at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal of the equipment from use if not already marked;

(5) PCB Large Low Voltage Capacitors at the time of removal from use;

(6) Electric motors using PCB coolants (See also paragraph (e) of this section).

(7) Hydraulic systems using PCB hydraulic fluid (See also paragraph (e) of this section);

(8) Heat transfer systems (other than PCB Transformers) using PCBs (See also paragraph (e) of this section);

(9) PCB Article Containers containing articles or equipment that must be marked under paragraph (a) (1) through (8) of this section;

(10) Each storage area used to store PCBs and PCB Items for disposal.

(b) As of October 1, 1978, each transport vehicle shall be marked on each end and side with M_L as described in § 761.45(a) if it is loaded with PCB Containers that contain more than 45 kg (99.4 lbs.) of PCBs in the liquid phase or with one or more PCB Transformers (See also paragraph (e) of this section).

(c) As of January 1, 1979, the following PCB Articles shall be marked with mark M_L as described in § 761.45(a):

(1) All PCB Transformers not marked under paragraph (a) of this section [marking of PCB-Contaminated Electrical Equipment is not required];

(2) All PCB Large High Voltage Capacitors not marked under paragraph (a) of this section

(i) Will be marked individually with mark M_L , or

(ii) If one or more PCB Large High Voltage Capacitors are installed in a protected location such as on a power pole, or structure, or behind a fence;

the pole, structure, or fence shall be marked with mark M_L , and a record or procedure identifying the PCB Capacitors shall be maintained by the owner or operator at the protected location.

(d) As of January 1, 1979, all PCB Equipment containing a PCB Small Capacitor shall be marked at the time of manufacture with the statement, "This equipment contains PCB Capacitor(s)". The mark shall be of the same size as the mark M_L .

(e) As of October 1, 1979, applicable PCB Items in paragraph (a) (1), (6), (7), and (8) of this section containing PCBs in concentrations of 50 to 500 ppm and applicable transport vehicles in paragraph (b) of this section loaded with PCB Containers that contain more than 45 kg (99.4 lbs.) of liquid PCBs in concentrations of 50 ppm to 500 ppm shall be marked with mark M_L as described in § 761.45(a).

(f) Where mark M_L is specified but the PCB Article or PCB Equipment is too small to accommodate the smallest permissible size of mark M_L , mark M_S as described in § 761.45(b), may be used instead of mark M_L .

(g) Each large low voltage capacitor, each small capacitor normally used in alternating current circuits, and each fluorescent light ballast manufactured ("manufactured", for purposes of this sentence, means built) between July 1, 1978 and July 1, 1998 that do not contain PCBs shall be marked by the manufacturer at the time of manufacture with the statement, "No PCBs". The mark shall be of similar durability and readability as other marking that indicate electrical information, part numbers, or the manufacturer's name. For purposes of this paragraph marking requirement only is applicable to items built domestically or abroad after June 30, 1978.

(h) All marks required by this subpart must be placed in a position on the exterior of the PCB Items or transport vehicles so that the marks can be easily read by any persons inspecting or servicing the marked PCB Items or transport vehicles.

(i) Any chemical substance or mixture that is manufactured after the effective date of this rule and that contains less than 500 ppm PCB (0.05% on a dry weight basis), including PCB

that is a byproduct or impurity, must be marked in accordance with any requirements contained in the exemption granted by EPA to permit such manufacture and is not subject to any other requirement in this subpart unless so specified in the exemption. This paragraph applies only to containers of chemical substances or mixtures. PCB articles and equipment into which the chemical substances or mixtures are processed, are subject to the marking requirements contained elsewhere in this subpart.

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at 47 FR 37359, Aug. 25, 1982]

§ 761.45 Marking formats.

The following formats shall be used for marking:

(a) *Large PCB Mark— M_L .* Mark M_L shall be as shown in Figure 1, letters and striping on a white or yellow background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article, PCB Equipment, or PCB Container. The size of the mark shall be at least 15.25 cm (6 inches) on each side. If the PCB Article or PCB Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 5 cm (2 inches) on each side.

(b) *Small PCB Mark— M_S .* Mark M_S shall be as shown in Figure 2, letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article, PCB Equipment, or PCB Container. The mark shall be a rectangle 2.5 by 5 cm (1 inch by 2 inches). If the PCB Article or PCB Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 1 by 2 cm (.4 by .8 inches).

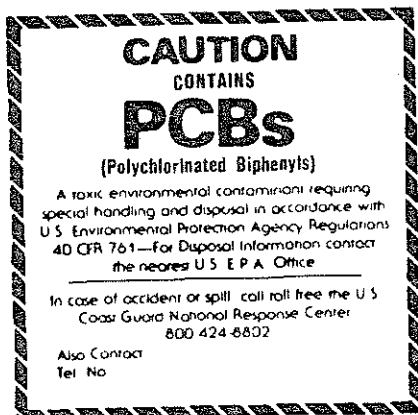


Figure 1

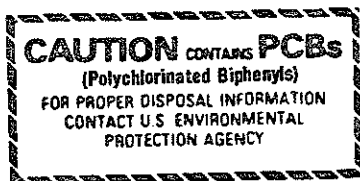


Figure 2

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982]

Subpart D—Storage and Disposal

NOTE: This subpart does not require removal of PCBs and PCB Items from service and disposal earlier than would normally be the case. However, when PCBs and PCB Items are removed from service and disposed of, disposal must be undertaken in accordance with these regulations. PCBs (including soils and debris) and PCB Items

which have been placed in a disposal site are considered to be "in service" for purposes of the applicability of this subpart. This subpart does not require PCBs and PCB Items landfilled prior to February 17, 1978 to be removed for disposal. However, if such PCBs or PCB Items are removed from the disposal site, they must be disposed of in accordance with this subpart. Other subparts are directed to the manufacture, processing, distribution in commerce, and use of PCBs and may result in some cases in disposal at an earlier date than would otherwise occur.

§ 761.60 Disposal requirements.

(a) **PCBs.** (1) Except as provided in paragraphs (a) (2), (3), (4), and (5) of this section, PCBs at concentrations of 50 ppm or greater must be disposed of in an incinerator which complies with § 761.70.

(2) Mineral oil dielectric fluid from PCB-contaminated Electrical Equipment containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, must be disposed of in one of the following:

(i) In an incinerator that complies with § 761.70;

(ii) In a chemical waste landfill that complies with § 761.75 if information is provided to the owner or operator of the chemical waste landfill that shows that the mineral oil dielectric fluid does not exceed 500 ppm PCB and is not an ignitable waste as described in § 761.75(b) (8) (iii);

(iii) In a high efficiency boiler provided that:

(A) The boiler complies with the following criteria:

(1) The boiler is rated at a minimum of 50 million BTU hours;

(2) If the boiler uses natural gas or oil as the primary fuel, the carbon monoxide concentration in the stack is 50 ppm or less and the excess oxygen is at least three (3) percent when PCBs are being burned;

(3) If the boiler uses coal as the primary fuel, the carbon monoxide concentration in the stack is 100 ppm or less and the excess oxygen is at least three (3) percent when PCBs are being burned;

(4) The mineral oil dielectric fluid does not comprise more than ten (10) percent (on a volume basis) of the total fuel feed rate;

(5) The mineral oil dielectric fluid is not fed into the boiler unless the boiler is operating at its normal operating temperature (this prohibits feeding these fluids during either start up or shut down operations);

(6) The owner or operator of the boiler:

(i) Continuously monitors and records the carbon monoxide concentration and excess oxygen percentage in the stack gas while burning mineral oil dielectric fluid; or

(ii) If the boiler will burn less than 30,000 gallons of mineral oil dielectric fluid per year, measures and records the carbon monoxide concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 minutes while burning mineral oil dielectric fluid.

(7) The primary fuel feed rates, mineral oil dielectric fluid feed rates, and total quantities of both primary fuel and mineral oil dielectric fluid fed to the boiler are measured and recorded at regular intervals of no longer than 15 minutes while burning mineral oil dielectric fluid.

(8) The carbon monoxide concentration and the excess oxygen percentage are checked at least once every hour that mineral oil dielectric fluid is burned. If either measurement falls below the levels specified in this rule, the flow of mineral oil dielectric fluid to the boiler shall be stopped immediately.

(B) Thirty days before any person burns mineral oil dielectric fluid in the boiler, the person gives written notice to the EPA Regional Administrator for the EPA Region in which the boiler is located and that the notice contains the following information:

(1) The name and address of the owner or operator of the boiler and the address of the boiler;

(2) The boiler rating in units of BTU/hour;

(3) The carbon monoxide concentration and the excess oxygen percentage in the stack of the boiler when it is operated in a manner similar to the manner in which it will be operated when mineral oil dielectric fluid is burned; and

(4) The type of equipment, apparatus, and procedures to be used to con-

trol the feed of mineral oil dielectric fluid to the boiler and to monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack.

(C) When burning mineral oil dielectric fluid, the boiler must operate at a level of output no less than the output at which the measurements required under paragraph (b)(2)(iii)(B)(3) of this section were taken.

(D) Any person burning mineral oil dielectric fluid in a boiler obtains the following information and retains the information for five years at the boiler location:

(1) The data required to be collected under paragraphs (a)(2)(A) (6) and (7) of this section; and

(2) The quantity of mineral oil dielectric fluid burned in the boiler each month;

(iv) In a facility that is approved in accordance with § 761.60(e). For the purpose of burning mineral oil dielectric fluid, an applicant under § 761.60(e) must show that his combustion process destroys PCBs as efficiently as does a high efficiency boiler, as defined in paragraph (b)(2)(iii) of this section, or a § 761.70 approved incinerator.

(3) Liquids, other than mineral oil dielectric fluid, containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, shall be disposed of:

(i) In an incinerator which complies with § 761.70;

(ii) In a chemical waste landfill which complies with § 761.75 if information is provided to the owner or operator of the chemical waste landfill that shows that the waste does not exceed 500 ppm PCB and is not an ignitable waste as described in § 761.75(b)(8)(iii);

(iii) In a high efficiency boiler provided that.

(A) The boiler complies with the following criteria:

(1) The boiler is rated at a minimum of 50 million BTU/hour;

(2) If the boiler uses natural gas or oil as the primary fuel, the carbon monoxide concentration in the stack is 50 ppm or less and the excess oxygen is at least three (3) percent when PCBs are being burned;

(3) If the boiler uses coal as the primary fuel, the carbon monoxide concentration in the stack is 100 ppm or less and the excess oxygen is at least three (3) percent when PCBs are being burned;

(4) The waste does not comprise more than ten (10) percent (on a volume basis) of the total fuel feed rate;

(5) The waste is not fed into the boiler unless the boiler is operating at its normal operating temperature (this prohibits feeding these fluids during either start up or shut down operations);

(6) The owner or operator of the boiler must:

(i) Continuously monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack gas while burning waste fluid; or

(ii) If the boiler will burn less than 30,000 gallons of waste fluid per year, measure and record the carbon monoxide concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 minutes while burning waste fluid;

(7) The primary fuel feed rate, waste fluid feed rate, and total quantities of both primary fuel and waste fluid fed to the boiler must be measured and recorded at regular intervals of no longer than 15 minutes while burning waste fluid; and

(8) The carbon monoxide concentration and the excess oxygen percentage must be checked at least once every hour that the waste is burned. If either measurement falls below the levels specified in this rule, the flow of waste to the boiler shall be stopped immediately.

(B) Prior to any person burning these liquids in the boiler, approval must be obtained from the EPA Regional Administrator for the EPA Region in which the boiler is located and any persons seeking such approval must submit to the EPA Regional Administrator a request containing at least the following information:

(1) The name and address of the owner or operator of the boiler and the address of the boiler;

(2) The boiler rating in units of BTU/hour;

(3) The carbon monoxide concentration and the excess oxygen percentage in the stack of the boiler when it is operated in a manner similar to the manner in which it will be operated when low concentration PCB liquid is burned;

(4) The type of equipment, apparatus, and procedures to be used to control the feed of mineral oil dielectric fluid to the boiler and to monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack;

(5) The type of waste to be burned (e.g., hydraulic fluid, contaminated fuel oil, heat transfer fluid, etc.);

(6) The concentration of PCBs and of any other chlorinated hydrocarbon in the waste and the results of analyses using the American Society of Testing and Materials (ASTM) methods as follows: carbon and hydrogen content using ASTM D-3178-73 (reapproved 1979), nitrogen content using ASTM E-258-67, sulfur content using ASTM D-2784-80, D-1266-80, or D-129-64, chlorine content using ASTM D-808-81, water and sediment content using either ASTM D-2709-68 or D-1796-63, ash content using D-482-80, calorific value using ASTM D-240-76 (reapproved 1980), carbon residue using either ASTM D-2158-80 or D-524-81, and flash point using ASTM D-93-80.

(7) The quantity of wastes estimated to be burned in a thirty (30) day period;

(8) An explanation of the procedures to be followed to insure that burning the waste will not adversely affect the operation of the boiler such that combustion efficiency will decrease.

(C) On the basis of the information in paragraph (a)(3)(iii)(B) of this section and any other available information, the Regional Administrator may, at his discretion, find that the alternate disposal method will not present an unreasonable risk of injury to health or the environment and approve the use of the boiler;

(D) When burning PCB wastes, the boiler must operate at a level of output no less than the output at which the measurements required under paragraph (a)(3)(iii)(B)(3) of this section were taken; and

(E) Any person burning liquids in boilers approved as provided in paragraph (a)(3)(iii)(C) of this section, must obtain the following information and retain the information for five years at the boiler location:

(1) The data required to be collected in paragraphs (a)(3)(iii)(A) (6) and (7) of this section;

(2) The quantity of low concentration PCB liquid burned in the boiler each month.

(3) The analysis of the waste required by paragraph (a)(3)(iii)(B)(6) of this section taken once a month for each month during which low concentration PCB liquid is burned in the boiler.

(iv) In a facility that is approved in accordance with § 761.60(e). For the purpose of burning liquids, other than mineral oil dielectric fluid, containing 50 ppm or greater PCB, but less than 500 ppm PCB, an applicant under § 761.60(e) must show that his combustion process destroys PCBs as efficiently as does a high efficiency boiler, as defined in § 761.60(a)(2)(iii), or a § 761.70 incinerator.

(4) Any non-liquid PCBs at concentrations of 50 ppm or greater in the form of contaminated soil, rags, or other debris shall be disposed of:

(i) In an incinerator which complies with § 761.70; or

(ii) In a chemical waste landfill which complies with § 761.75.

NOTE: Except as provided in § 761.75(b)(8)(ii), liquid PCBs shall not be processed into non-liquid forms to circumvent the high temperature incineration requirements of § 761.60(a).

(5) All dredged materials and municipal sewage treatment sludges that contain PCBs at concentrations of 50 ppm or greater shall be disposed of:

(i) In an incinerator which complies with § 761.70,

(ii) In a chemical waste landfill which complies with § 761.65; or

(iii) Upon application, using a disposal method to be approved by the Agency's Regional Administrator in the EPA Region in which the PCBs are located. Applications for disposal in a manner other than prescribed in (i) or (ii) of this section must be made in writing to the Regional Administrator. The application must contain informa-

tion that, based on technical, environmental, and economic considerations, indicates that disposal in an incinerator or chemical waste landfill is not reasonable and appropriate, and that the alternate disposal method will provide adequate protection to health and the environment. The Regional Administrator may request other information that he or she believes to be necessary for evaluation of the alternate disposal method. Any approval by the Regional Administrator shall be in writing and may contain any appropriate limitations on the approved alternate method for disposal. In addition to these regulations, the Regional Administrator shall consider other applicable Agency guidelines, criteria, and regulations to ensure that the discharges of dredged material and sludges that contain PCBs and other contaminants are adequately controlled to protect the environment. The person to whom such approval is issued must comply with all limitations contained in the approval.

(6) When storage is desired prior to disposal, PCBs at concentrations of 50 ppm or greater shall be stored in a facility which complies with § 761.65.

(b) *PCB Articles*—(1) *Transformers*. (i) PCB Transformers shall be disposed of in accordance with either of the following:

(A) In an incinerator that complies with § 761.70; or

(B) In a chemical waste landfill which complies with § 761.75; *Provided*, That the transformer is first drained of all free flowing liquid, filled with solvent, allowed to stand for at least 18 hours, and then drained thoroughly. PCB liquids that are removed shall be disposed of in accordance with paragraph (a) of this section. Solvents may include kerosene, xylene, toluene and other solvents in which PCBs are readily soluble. Precautionary measures should be taken, however, that the solvent flushing procedure is conducted in accordance with applicable safety and health standards as required by Federal or State regulations.

(2) *PCB Capacitors*. (i) The disposal of any capacitor shall comply with all requirements of this subpart unless it is known from label or nameplate information, manufacturer's literature

(including documented communications with the manufacturer), or chemical analysis that the capacitor does not contain PCBs.

(ii) Any person may dispose of PCB Small Capacitors as municipal solid waste, unless that person is subject to the requirements of paragraph (b)(2)(iv) of this section.

(iii) Any PCB Large High or Low Voltage Capacitor which contains 500 ppm or greater PCBs, owned by any person, shall be disposed of in accordance with either of the following:

(A) Disposal in an incinerator that complies with § 761.70; or

(B) Until March 1, 1981, disposal in a chemical waste landfill that complies with § 761.75.

(iv) Any PCB Small Capacitor owned by any person who manufactures or at any time manufactured PCB Capacitors or PCB Equipment and acquired the PCB Capacitors in the course of such manufacturing shall be disposed of in accordance with either of the following:

(A) Disposal in an incinerator which complies with § 761.70; or

(B) Until March 1, 1981, disposal in a chemical waste landfill which complies with § 761.75.

(v) Notwithstanding the restrictions imposed by paragraph (b)(2)(iii)(B) or (b)(2)(iv)(B) of this section, PCB capacitors may be disposed of in PCB chemical waste landfills that comply with § 761.75 subsequent to March 1, 1981, if the Assistant Administrator for Pesticides and Toxic Substances publishes a notice in the FEDERAL REGISTER declaring that those landfills are available for such disposal and explaining the reasons for the extension or reopening. An extension or reopening for disposal of PCB capacitors that is granted under this subsection shall be subject to such terms and conditions as the Assistant Administrator may prescribe and shall be in effect for such period as the Assistant Administrator may prescribe. The Assistant Administrator may permit disposal of PCB capacitors in EPA approved chemical waste landfills after March 1, 1981, if in his opinion,

(A) Adequate incineration capability for PCB capacitors is not available, or

(B) The incineration of PCB capacitors will significantly interfere with the incineration of liquid PCBs, or

(C) There is other good cause shown.

As part of this evaluation, the Assistant Administrator will consider the impact of his action on the incentives to construct or expand PCB incinerators.

(vi) Prior to disposal in a § 761.75 chemical waste landfill, all large PCB capacitors, and all small PCB capacitors described in paragraph (b)(2)(iv) of this section, shall be placed in one of the Department of Transportation specification containers identified in § 761.65(c)(6) or in containers that comply with 49 CFR 178.118 (specification 17H containers). Large PCB capacitors which are too big to fit inside one of these containers shall be placed in a container with strength and durability equivalent to the DOT specification containers. In all cases, interstitial space in the container shall be filled with sufficient absorbent material (such as sawdust or soil) to absorb any liquid PCBs remaining in the capacitors.

(3) *PCB hydraulic machines.* PCB hydraulic machines containing PCBs at concentrations of 50 ppm or greater such as die casting machines may be disposed of as municipal solid waste or salvage provided that the machines are drained of all free-flowing liquid and the liquid is disposed of in accordance with the provisions of paragraph (a) of this section. If the PCB liquid contains 1000 ppm PCB or greater, then the hydraulic machine must be flushed prior to disposal with a solvent containing less than 50 ppm PCB under transformer solvents at paragraph (b)(1)(i)(B) of this section and the solvent disposed of in accordance with paragraph (a) of this section.

(4) *PCB-Contaminated Electrical Equipment.* All PCB-Contaminated Electrical Equipment except capacitors shall be disposed of by draining all free flowing liquid from the electrical equipment and disposing of the liquid in accordance with paragraph (a)(2) or (3) of this section. The disposal of the drained electrical equipment is not regulated by this rule. Capacitors that contain between 50 and 500

ppm PCBs shall be disposed of in an incinerator that complies with § 761.70 or in a chemical waste landfill that complies with § 761.75.

(5) *Other PCB Articles.* (i) PCB articles with concentrations at 50 ppm or greater must be disposed of:

(A) In an incinerator that complies with § 761.70; or

(B) In a chemical waste landfill that complies with § 761.75, provided that all free-flowing liquid PCBs have been thoroughly drained from any articles before the articles are placed in the chemical waste landfill and that the drained liquids are disposed of in an incinerator that complies with § 761.70.

(ii) PCB Articles with a PCB concentration between 50 and 500 ppm must be disposed of by draining all free flowing liquid from the article and disposing of the liquid in accordance with paragraph (a)(2) or (3) of this section. The disposal of the drained article is not regulated by this rule.

(6) *Storage of PCB Articles.* Except for a PCB Article described in paragraph (b)(2)(ii) of this section and hydraulic machines that comply with the municipal solid waste disposal provisions described in paragraph (b)(3) of this section, any PCB Article, with PCB concentrations at 50 ppm or greater, shall be stored in accordance with § 761.65 prior to disposal.

(c) *PCB Containers.* (1) Unless decontaminated in compliance with § 761.79 or as provided in paragraph (c)(2) of this section, a PCB container with PCB concentrations at 50 ppm or greater shall be disposed of:

(i) In an incinerator which complies with § 761.70, or

(ii) In a chemical waste landfill that complies with § 761.75; provided that if there are PCBs in a liquid state, the PCB Container shall first be drained and the PCB liquid disposed of in accordance with paragraph (a) of this section.

(2) Any PCB Container used to contain only PCBs at a concentration less than 500 ppm shall be disposed of as municipal solid wastes; provided that if the PCBs are in a liquid state, the PCB Container shall first be drained and the PCB liquid shall be disposed

of in accordance with paragraph (a) of this section.

(3) Prior to disposal, a PCB container with PCB concentrations at 50 ppm or greater shall be stored in a facility which complies with § 761.65.

(d) *Spills.* (1) Spills and other uncontrolled discharges of PCBs at concentrations of 50 ppm or greater constitute the disposal of PCBs.

(2) PCBs resulting from the clean-up and removal of spills, leaks, or other uncontrolled discharges, must be stored and disposed of in accordance with paragraph (a) of this section.

(3) These regulations do not exempt any person from any actions or liability under other statutory authorities, including but not limited to the Clean Water Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

(e) Any person who is required to incinerate any PCBs and PCB Items under this subpart and who can demonstrate that an alternative method of destroying PCBs and PCB Items exists and that this alternative method can achieve a level of performance equivalent to § 761.70 incinerators or high efficiency boilers as provided in paragraph (a)(2)(iv) and (a)(3)(iv) of this section, may submit a written request to either the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances for an exemption from the incineration requirements of § 761.70 or § 761.60. Requests for approval of alternate methods that will be operated in more than one region must be submitted to the Assistant Administrator for Pesticides and Toxic Substances except for research and development involving less than 500 pounds of PCB material (see paragraph (i)(2) of this section). Requests for approval of alternate methods that will be operated in only one region must be submitted to the appropriate Regional Administrator. The applicant must show that his method of destroying PCBs will not present an unreasonable risk of injury to health or the environment. On the basis of such information and any available information, the Regional Administrator or Assistant Administrator for Pesti-

cides and Toxic Substances may, in his discretion, approve the use of the alternate method if he finds that the alternate disposal method provides PCB destruction equivalent to disposal in a § 761.70 incinerator or a § 761.60 high efficiency boiler and will not present an unreasonable risk of injury to health or the environment. Any approval must be stated in writing and may contain such conditions and provisions as the Regional Administrator or Assistant Administrator for Pesticides and Toxic Substances deems appropriate. The person to whom such waiver is issued must comply with all limitations contained in such determination.

(f)(1) Each operator of a chemical waste landfill, incinerator, or alternative to incineration approved under paragraph (e) of this section shall give the following written notices to the state and local governments within whose jurisdiction the disposal facility is located:

(i) Notice at least thirty (30) days before a facility is first used for disposal of PCBs required by these regulations; and

(ii) At the request of any state or local government, annual notice of the quantities and general description of PCBs disposed of during the year. This annual notice shall be given no more than thirty (30) days after the end of the year covered.

(iii) The Regional Administrator may reduce the notice period required by paragraph (f)(1)(i) of this section from thirty days to a period of no less than five days in order to expedite interim approval of the chemical waste landfill located in Sedgwick County, Kansas.

(2) Any person who disposes of PCBs under a paragraph (a)(5)(iii) of this section incineration or chemical waste landfilling waiver shall give written notice at least thirty (30) days prior to conducting the disposal activities to the state and local governments within whose jurisdiction the disposal is to take place.

(g) *Testing procedures.* (1) Owners or users of mineral oil dielectric fluid electrical equipment may use the following procedures to determine the

concentration of PCBs in the dielectric fluid:

(i) Dielectric fluid removed from mineral oil dielectric fluid electrical equipment may be collected in a common container, provided that no other chemical substances or mixtures are added to the container. This common container option does not permit dilution of the collected oil. Mineral oil that is assumed or known to contain at least 50 ppm PCBs must not be mixed with mineral oil that is known or assumed to contain less than 50 ppm PCBs to reduce the concentration of PCBs in the common container. If dielectric fluid from untested, oil-filled circuit breakers, reclosers, or cable is collected in a common container with dielectric fluid from other oil-filled electrical equipment, the entire contents of the container must be treated as PCBs at a concentration of at least 50 ppm, unless all of the fluid from the other oil-filled electrical equipment has been tested and shown to contain less than 50 ppm PCBs.

(ii) For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common containers or the individual electrical equipment to determine the PCB concentration, except that if any PCBs at a concentration of 500 ppm or greater have been added to the container or equipment then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements of this subpart. For purposes of this subparagraph, representative samples of mineral oil dielectric fluid are either samples taken in accordance with American Society of Testing and Materials method D-923 or samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container.

(2) Owners or users of waste oil may use the following procedures to determine the PCB concentration of waste oil:

(i) Waste oil from more than one source may be collected in a common container, provided that no other

chemical substances or mixtures, such as non-waste oils, are added to the container.

(ii) For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common containers or the individual electrical equipment to determine the PCB concentration. *Except*, That if any PCBs at a concentration of 500 ppm or greater have been added to the container or equipment then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements of this Subpart. For purposes of this paragraph, representative samples of mineral oil dielectric fluid are either samples taken in accordance with American Society of Testing and Materials method D-923-81 or samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container.

(h) Requirements for export and import of PCBs for purposes of disposal and PCB Items for purposes of disposal are found in § 761.20.

(i) *Approval authority for disposal methods.* (1) The officials (the Assistant Administrator for Pesticides and Toxic Substances and the Regional Administrators) designated in §§ 761.60 (e) and 761.70 (a) and (b) to receive requests for approval of PCB disposal activities are the primary approval authorities for these activities. Notwithstanding, the Assistant Administrator for Pesticides and Toxic Substances may, at his/her discretion, assign the authority to review and approve any aspect of a disposal system to the Office of Pesticides and Toxic Substances or to a Regional Administrator.

(2) Except for activity authorized under § 761.30(j), research and development (R and D) into PCB disposal methods using a total of less than 500 pounds of PCB material (regardless of PCB concentration) will be reviewed and approved by the appropriate EPA Regional Administrator and research and development using 500 pounds or more of PCB material (regardless of

PCB concentration) will be reviewed by the approval authorities set out in §§ 761.60(e) and 761.70 (a) and (b).

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

144 FR 31542, May 31, 1979, as amended at 44 FR 54297, Sept. 19, 1979; 45 FR 20475, Mar. 28, 1980. Redesignated at 47 FR 19527, May 6, 1982, and amended at 47 FR 37359, Aug. 25, 1982; 48 FR 5730, Feb. 8, 1983; 48 FR 13185, Mar. 30, 1983; 48 FR 15125, Apr. 7, 1983; 49 FR 28191, July 10, 1984; 49 FR 36648, Sept. 19, 1984]

§ 761.65 Storage for disposal.

This section applies to the storage for disposal of PCBs at concentrations of 50 ppm or greater and PCB Items with PCB concentrations of 50 ppm or greater.

(a) Any PCB Article or PCB Container stored for disposal before January 1, 1983, shall be removed from storage and disposed of as required by this part before January 1, 1984. Any PCB Article or PCB Container stored for disposal after January 1, 1983, shall be removed from storage and disposed of as required by Subpart D of this part within one year from the date when it was first placed into storage.

(b) Except as provided in paragraph (c) of this section, after July 1, 1978, owners or operators of any facilities used for the storage of PCBs and PCB Items designated for disposal shall comply with the following requirements:

(1) The facilities shall meet the following criteria:

(i) Adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB Items;

(ii) An adequate floor which has continuous curbing with a minimum six inch high curb. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB Article or PCB Container stored therein or 25 percent of the total internal volume of all PCB Articles or PCB Containers stored therein, whichever is greater;

(iii) No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area;

(iv) Floors and curbing constructed of continuous smooth and impervious materials, such as Portland cement concrete or steel, to prevent or minimize penetration of PCBs; and

(v) Not located at a site that is below the 100-year flood water elevation.

(c)(1) The following PCB Items may be stored temporarily in an area that does not comply with the requirements of paragraph (b) of this section for up to thirty days from the date of their removal from service, provided that a notation is attached to the PCB Item or a PCB Container (containing the item) indicating the date the item was removed from service:

(i) Non-leaking PCB Articles and PCB Equipment;

(ii) Leaking PCB Articles and PCB Equipment if the PCB Items are placed in a non-leaking PCB Container that contains sufficient sorbent materials to absorb any liquid PCBs remaining in the PCB Items;

(iii) PCB Containers containing non-liquid PCBs such as contaminated soil, rags, and debris; and

(iv) PCB Containers containing liquid PCBs at a concentration between 50 and 500 ppm, provided a Spill Prevention, Control and Countermeasure Plan has been prepared for the temporary storage area in accordance with 40 CFR Part 112. In addition, each container must bear a notation that indicates that the liquids in the drum do not exceed 500 ppm PCB.

(2) Non-leaking and structurally undamaged PCB Large High Voltage Capacitors and PCB-Contaminated Electrical Equipment that have not been drained of free flowing dielectric fluid may be stored on pallets next to a storage facility that meets the requirements of paragraph (b) of this section. PCB-Contaminated Electrical Equipment that has been drained of free flowing dielectric fluid is not subject to the storage provisions of § 761.65. Storage under this subparagraph will be permitted only when the storage facility has immediately available unfilled storage space equal to 10 percent of the volume of capacitors and equipment stored outside the facility. The capacitors and equipment temporarily stored outside the facility shall be checked for leaks weekly.

(3) Any storage area subject to the requirements of paragraph (b) or paragraph (c)(1) of this section shall be marked as required in Subpart C—§ 761.40(a)(10).

(4) No item of movable equipment that is used for handling PCBs and PCB Items in the storage facilities and that comes in direct contact with PCBs shall be removed from the storage facility area unless it has been decontaminated as specified in § 761.79.

(5) All PCB Articles and PCB Containers in storage shall be checked for leaks at least once every 30 days. Any leaking PCB Articles and PCB Containers and their contents shall be transferred immediately to properly marked non-leaking containers. Any spilled or leaked materials shall be immediately cleaned up, using sorbents or other adequate means, and the PCB-contaminated materials and residues shall be disposed of in accordance with § 761.60(a)(4).

(6) Except as provided in paragraph (c)(7) of this section, any container used for the storage of liquid PCBs shall comply with the Shipping Container Specification of the Department of Transportation (DOT), 49 CFR 178.80 (Specification 5 container without removable head), 178.82 (Specification 5B container without removable head), 178.102 (Specification 6D overpack with Specification 2S (§ 178.35) or 2SL (§ 178.35a) polyethylene containers) or 178.116 (Specification 17E container). Any container used for the storage of non-liquid PCBs shall comply with the specifications of 49 CFR 178.80 (Specification 5 container), 178.82 (Specification 5B container) or 178.115 (Specification 17C container). As an alternate, containers larger than those specified in DOT Specifications 5, 5B, or 17C may be used for non-liquid PCBs if the containers are designed and constructed in a manner that will provide as much protection against leaking and exposure to the environment as the DOT Specification containers, and are of the same relative strength and durability as the DOT Specification containers.

(7) Storage containers for liquid PCBs can be larger than the contain-

ers specified in paragraph (c)(6) of this section provided that:

(i) The containers are designed, constructed, and operated in compliance with Occupational Safety and Health Standards, 29 CFR 1910.106, *Flammable and combustible liquids*. Before using these containers for storing PCBs, the design of the containers must be reviewed to determine the effect on the structural safety of the containers that will result from placing liquids with the specific gravity of PCBs into the containers (see 29 CFR 1910.106(b)(1)(f)).

(ii) The owners or operators of any facility using containers described in paragraph (c)(7)(i) of this section shall prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan as described in Part 112 of this title. In complying with 40 CFR Part 112, the owner or operator shall read "oil(s)" as "PCB(s)" whenever it appears. The exemptions for storage capacity, 40 CFR 112.1(d)(2), and the amendment of SPCC plans by the Regional Administrator, 40 CFR 112.4, shall not apply unless some fraction of the liquids stored in the container are oils as defined by section 311 of the Clean Water Act.

(8) PCB Articles and PCB Containers shall be dated on the article or container when they are placed in storage. The storage shall be managed so that the PCB Articles and PCB Containers can be located by the date they entered storage. Storage containers provided in paragraph (c)(7) of this section shall have a record that includes for each batch of PCBs the quantity of the batch and date the batch was added to the container. The record shall also include the date, quantity, and disposition of any batch of PCBs removed from the container.

(9) Owners or operators of storage facilities shall establish and maintain records as provided in § 761.80.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at 47 FR 37359, Aug. 8, 1982; 49 FR 28191, July 10, 1984]

§ 761.70 Incineration.

This section applies to facilities used to incinerate PCBs required to be incinerated by this part.

(a) *Liquid PCBs*. An incinerator used for incinerating PCBs shall be approved by an EPA Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances pursuant to paragraph (d) of this section. Requests for approval of incinerators to be used in more than one region must be submitted to the Assistant Administrator for Pesticides and Toxic Substances, except for research and development involving less than 500 pounds of PCB material (see § 761.60(i)(2)). Requests for approval of incinerators to be used in only one region must be submitted to the appropriate Regional Administrator. The incinerator shall meet all of the requirements specified in paragraph (a) (1) through (9) of this section, unless a waiver from these requirements is obtained pursuant to paragraph (d)(5) of this section. In addition, the incinerator shall meet any other requirements which may be prescribed pursuant to paragraph (d)(4) of this section.

(1) Combustion criteria shall be either of the following:

(i) Maintenance of the introduced liquids for a 2-second dwell time at 1200°C(±100°C) and 3 percent excess oxygen in the stack gas; or

(ii) Maintenance of the introduced liquids for a 1½ second dwell time at 1600°C(±100°C) and 2 percent excess oxygen in the stack gas.

(2) Combustion efficiency shall be at least 99.9 percent computed as follows:

Combustion efficiency =

$$\frac{Cco_2}{Cco_2 + Cco} \times 100$$
 where

Cco₂ = Concentration of carbon dioxide.
 Cco = Concentration of carbon monoxide.

(3) The rate and quantity of PCBs which are fed to the combustion system shall be measured and recorded at regular intervals of no longer than 15 minutes.

(4) The temperatures of the incineration process shall be continuously measured and recorded. The combustion temperature of the incineration process shall be based on either direct

(pyrometer) or indirect (wall thermo-couple-pyrometer correlation) temperature readings.

(5) The flow of PCBs to the incinerator shall stop automatically whenever the combustion temperature drops below the temperatures specified in paragraph (a)(1) of this section.

(6) Monitoring of stack emission products shall be conducted:

(i) When an incinerator is first used for the disposal of PCBs under the provisions of this regulation;

(ii) When an incinerator is first used for the disposal of PCBs after the incinerator has been modified in a manner which may affect the characteristics of the stack emission products; and

(iii) At a minimum such monitoring shall be conducted for the following parameters: (a) O₂; (b) CO; (c) CO₂; (d) Oxides of Nitrogen (NO_x); (e) Hydrochloric Acid (HCl); (f) Total Chlorinated Organic Content (RCI); (g) PCBs; and (h) Total Particulate Matter.

(7) At a minimum monitoring and recording of combustion products and incineration operations shall be conducted for the following parameters whenever the incinerator is incinerating PCBs: (i) O₂; (ii) CO; and (iii) CO₂. The monitoring for O₂ and CO shall be continuous. The monitoring for CO₂ shall be periodic, at a frequency specified by the Regional Administrator or Assistant Administrator for Pesticides and Toxic Substances.

(8) The flow of PCBs to the incinerator shall stop automatically when any one or more of the following conditions occur, unless a contingency plan is submitted by the incinerator owner or operator and approved by the Regional Administrator or Assistant Administrator for Pesticides and Toxic Substances. The contingency plan indicates what alternative measures the incinerator owner or operator would take if any of the following conditions occur:

(i) Failure of monitoring operations specified in paragraph (a)(7) of this section;

(ii) Failure of the PCB rate and quantity measuring and recording equipment specified in paragraph (a)(3) of this section; or

(iii) Excess oxygen falls below the percentage specified in paragraph (a)(1) of this section.

(9) Water scrubbers shall be used for HCl control during PCB incineration and shall meet any performance requirements specified by the appropriate EPA Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances. Scrubber effluent shall be monitored and shall comply with applicable effluent or pretreatment standards, and any other State and Federal laws and regulations. An alternate method of HCl control may be used if the alternate method has been approved by the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances. (The HCl neutralizing capability of cement kilns is considered to be an alternate method.)

(b) *Nonliquid PCBs.* An incinerator used for incinerating nonliquid PCBs, PCB Articles, PCB Equipment, or PCB Containers shall be approved by the appropriate EPA Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances pursuant to paragraph (d) of this section. Requests for approval of incinerators to be used in more than one region must be submitted to the Assistant Administrator for Pesticides and Toxic Substances, except for research and development involving less than 500 pounds of PCB material (see § 761.60(i)(2)). Requests for approval of incinerators to be used in only one region must be submitted to the appropriate Regional Administrator. The incinerator shall meet all of the requirements specified in paragraphs (b) (1) and (2) of this section unless a waiver from these requirements is obtained pursuant to paragraph (d)(5) of this section. In addition, the incinerator shall meet any other requirements that may be prescribed pursuant to paragraph (d)(4) of this section.

(1) The mass air emissions from the incinerator shall be no greater than 0.001g PCB/kg of the PCB introduced into the incinerator.

(2) The incinerator shall comply with the provisions of paragraphs (a)(2), (3), (4), (6), (7), (8)(i) and (ii), and (9) of this section.

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(c) *Maintenance of data and records.* All data and records required by this section shall be maintained in accordance with § 761.80, Records and monitoring.

(d) *Approval of incinerators.* Prior to the incineration of PCBs and PCB Items the owner or operator of an incinerator shall receive the written approval of the Agency Regional Administrator for the region in which the incinerator is located, or the Assistant Administrator for Pesticides and Toxic Substances. Approval from the Assistant Administrator for Pesticides and Toxic Substances may be effective in all ten EPA regions. Such approval shall be obtained in the following manner:

(1) *Application.* The owner or operator shall submit to the Regional Administrator or the Assistant Administrator an application which contains:

(i) The location of the incinerator;

(ii) A detailed description of the incinerator including general site plans and design drawings of the incinerator;

(iii) Engineering reports or other information on the anticipated performance of the incinerator;

(iv) Sampling and monitoring equipment and facilities available;

(v) Waste volumes expected to be incinerated;

(vi) Any local, State, or Federal permits or approvals; and

(vii) Schedules and plans for complying with the approval requirements of this regulation.

(2) *Trial burn.* (i) Following receipt of the application described in paragraph (d)(1) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances shall determine if a trial burn is required and notify the person who submitted the report whether a trial burn of PCBs and PCB Items must be conducted. The Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may require the submission of any other information that the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances finds to be reasonably necessary to determine the need for a trial burn. Such other information

shall be restricted to the types of information required in paragraphs (d)(1) (i) through (vii) of this section.

(ii) If the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances determines that a trial burn must be held, the person who submitted the report described in paragraph (d)(1) of this section shall submit to the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances a detailed plan for conducting and monitoring the trial burn. At a minimum, the plan must include:

(A) Date trial burn is to be conducted;

(B) Quantity and type of PCBs and PCB Items to be incinerated;

(C) Parameters to be monitored and location of sampling points;

(D) Sampling frequency and methods and schedules for sample analyses; and

(E) Name, address, and qualifications of persons who will review analytical results and other pertinent data, and who will perform a technical evaluation of the effectiveness of the trial burn.

(iii) Following receipt of the plan described in paragraph (d)(2)(ii) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances will approve the plan, require additions or modifications to the plan, or disapprove the plan. If the plan is disapproved, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances will notify the person who submitted the plan of such disapproval, together with the reasons why it is disapproved. That person may thereafter submit a new plan in accordance with paragraph (d)(2)(ii) of this section. If the plan is approved (with any additions or modifications which the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may prescribe), the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances will notify the person who submitted the plan of the approval. Thereafter, the trial burn shall take place at a date and time to be agreed upon between the Regional Administrator or

the Assistant Administrator for Pesticides and Toxic Substances and the person who submitted the plan.

(3) *Other information.* In addition to the information contained in the report and plan described in paragraphs (d) (1) and (2) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may require the owner or operator to submit any other information that the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances finds to be reasonably necessary to determine whether an incinerator shall be approved.

NOTE: The Regional Administrator will have available for review and inspection an Agency manual containing information on sampling methods and analytical procedures for the parameters required in § 761.70(a) (3), (4), (6), and (7) plus any other parameters he/she may determine to be appropriate. Owners or operators are encouraged to review this manual prior to submitting any report required in § 761.70.

(4) *Contents of approval.* (i) Except as provided in paragraph (d)(5) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may not approve an incinerator for the disposal of PCBs and PCB Items unless he finds that the incinerator meets all of the requirements of paragraphs (a) and/or (b) of this section.

(ii) In addition to the requirements of paragraphs (a) and/or (b) of this section, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may include in an approval any other requirements that the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances finds are necessary to ensure that operation of the incinerator does not present an unreasonable risk of injury to health or the environment from PCBs. Such requirements may include a fixed period of time for which the approval is valid.

(5) *Waivers.* An owner or operator of the incinerator may submit evidence to the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances that operation of the incinerator will not present an

unreasonable risk of injury to health or the environment from PCBs, when one or more of the requirements of paragraphs (a) and/or (b) of this section are not met. On the basis of such evidence and any other available information, the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances may in his/her discretion find that any requirement of paragraphs (a) and (b) of this section is not necessary to protect against such a risk, and may waive the requirements in any approval for that incinerator. Any finding and waiver under this paragraph must be stated in writing and included as part of the approval.

(6) *Persons approved.* An approval will designate the persons who own and who are authorized to operate the incinerator, and will apply only to such persons, except as provided in paragraph (d)(8) of this section.

(7) *Final approval.* Approval of an incinerator will be in writing and signed by the Regional Administrator or the Assistant Administrator for Pesticides and Toxic Substances. The approval will state all requirements applicable to the approved incinerator.

(8) *Transfer of property.* Any person who owns or operates an approved incinerator must notify EPA at least 30 days before transferring ownership in the incinerator or the property it stands upon, or transferring the right to operate the incinerator. The transferor must also submit to EPA, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the transferee will abide by the transferor's EPA incinerator approval. Within 30 days of receiving such notification and affidavit, EPA will issue an amended approval substituting the transferee's name for the transferor's name, or EPA may require the transferee to apply for a new incinerator approval. In the latter case, the transferee must abide by the transferor's EPA approval until EPA issues the new approval to the transferee.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at

48 FR 13185, Mar. 30, 1983; 49 FR 28191, July 10, 1984]

§ 761.75 Chemical waste landfills.

This section applies to facilities used to dispose of PCBs in accordance with the part.

(a) *General.* A chemical waste landfill used for the disposal of PCBs and PCB Items shall be approved by the Agency Regional Administrator pursuant to paragraph (c) of this section. The landfill shall meet all of the requirements specified in paragraph (b) of this section, unless a waiver from these requirements is obtained pursuant to paragraph (c)(4) of this section. In addition, the landfill shall meet any other requirements that may be prescribed pursuant to paragraph (c)(3) of this section.

(b) *Technical requirements.* Requirements for chemical waste landfills used for the disposal of PCBs and PCB Items are as follows:

(1) *Soils.* The landfill site shall be located in thick, relatively impermeable formations such as large-area clay pans. Where this is not possible, the soil shall have a high clay and silt content with the following parameters:

- (i) In-place soil thickness, 4 feet or compacted soil liner thickness, 3 feet;
- (ii) Permeability (cm/sec), equal to or less than 1×10^{-7} ;
- (iii) Percent soil passing No. 200 Sieve, >30;
- (iv) Liquid Limit, >30; and
- (v) Plasticity Index >15.

(2) *Synthetic membrane liners.* Synthetic membrane liners shall be used when, in the judgment of the Regional Administrator, the hydrologic or geologic conditions at the landfill require such a liner in order to provide at least a permeability equivalent to the soils in paragraph (b)(1) of this section. Whenever a synthetic liner is used at a landfill site, special precautions shall be taken to insure that its integrity is maintained and that it is chemically compatible with PCBs. Adequate soil underlining and soil cover shall be provided to prevent excessive stress on the liner and to prevent rupture of the liner. The liner must have a minimum thickness of 30 mils.

(3) *Hydrologic conditions.* The bottom of the landfill shall be above

the historical high groundwater table as provided below. Floodplains, shorelands, and groundwater recharge areas shall be avoided. There shall be no hydraulic connection between the site and standing or flowing surface water. The site shall have monitoring wells and leachate collection. The bottom of the landfill liner system or natural in-place soil barrier shall be at least fifty feet from the historical high water table.

(4) *Flood protection.* (i) If the landfill site is below the 100-year floodwater elevation, the operator shall provide surface water diversion dikes around the perimeter of the landfill site with a minimum height equal to two feet above the 100-year floodwater elevation.

(ii) If the landfill site is above the 100-year floodwater elevation, the operators shall provide diversion structures capable of diverting all of the surface water runoff from a 24-hour, 25-year storm.

(5) *Topography.* The landfill site shall be located in an area of low to moderate relief to minimize erosion and to help prevent landslides or slumping.

(6) *Monitoring systems*—(i) *Water sampling.* (A) For all sites receiving PCBs, the ground and surface water from the disposal site area shall be sampled prior to commencing operations under an approval provided in paragraph (c) of this section for use as baseline data.

(B) Any surface watercourse designated by the Regional Administrator using the authority provided in paragraph (c)(3)(ii) of this section shall be sampled at least monthly when the landfill is being used for disposal operations.

(C) Any surface watercourse designated by the Regional Administrator using the authority provided in paragraph (c)(3)(ii) of this section shall be sampled for a time period specified by the Regional Administrator on a frequency of no less than once every six months after final closure of the disposal area.

(ii) *Groundwater monitor wells.* (A) If underlying earth materials are homogenous, impermeable, and uniformly sloping in one direction, only three

sampling points shall be necessary. These three points shall be equally spaced on a line through the center of the disposal area and extending from the area of highest water table elevation to the area of the lowest water table elevation on the property.

(B) All monitor wells shall be cased and the annular space between the monitor zone (zone of saturation) and the surface shall be completely back-filled with Portland cement or an equivalent material and plugged with Portland cement to effectively prevent percolation of surface water into the well bore. The well opening at the surface shall have a removable cap to provide access and to prevent entrance of rainfall or stormwater runoff. The well shall be pumped to remove the volume of liquid initially contained in the well before obtaining a sample for analysis. The discharge shall be treated to meet applicable State or Federal discharge standards or recycled to the chemical waste landfill.

(iii) *Water analysis.* As a minimum, all samples shall be analyzed for the following parameters, and all data and records of the sampling and analysis shall be maintained as required in § 761.80(d)(1). Sampling methods and analytical procedures for these parameters shall comply with those specified in 40 CFR Part 136 as amended in 41 FR 52779 on December 1, 1976.

- (A) PCBs.
- (B) pH.
- (C) Specific conductance.
- (D) Chlorinated organics.

(7) *Leachate collection.* A leachate collection monitoring system shall be installed above the chemical waste landfill. Leachate collection systems shall be monitored monthly for quantity and physicochemical characteristics of leachate produced. The leachate should be either treated to acceptable limits for discharge in accordance with a State or Federal permit or disposed of by another State or Federally approved method. Water analysis shall be conducted as provided in paragraph (b)(6)(iii) of this section. Acceptable leachate monitoring/collection systems shall be any of the following designs, unless a waiver is obtained pursuant to paragraph (c)(4) of this section.

(i) *Simple leachate collection.* This system consists of a gravity flow drainfield installed above the waste disposal facility liner. This design is recommended for use when semi-solid or leachable solid wastes are placed in a lined pit excavated into a relatively thick, unsaturated, homogenous layer of low permeability soil.

(ii) *Compound leachate collection.* This system consists of a gravity flow drainfield installed above the waste disposal facility liner and above a secondary installed liner. This design is recommended for use when semi-liquid or leachable solid wastes are placed in a lined pit excavated into relatively permeable soil.

(iii) *Suction lysimeters.* This system consists of a network of porous ceramic cups connected by hoses/tubing to a vacuum pump. The porous ceramic cups or suction lysimeters are installed along the sides and under the bottom of the waste disposal facility liner. This type of system works best when installed in a relatively permeable unsaturated soil immediately adjacent to the bottom and/or sides of the disposal facility.

(8) *Chemical waste landfill operations.* (i) PCBs and PCB Items shall be placed in a landfill in a manner that will prevent damage to containers or articles. Other wastes placed in the landfill that are not chemically compatible with PCBs and PCB Items including organic solvents shall be segregated from the PCBs throughout the waste handling and disposal process.

(ii) An operation plan shall be developed and submitted to the Regional Administrator for approval as required in paragraph (c) of this section. This plan shall include detailed explanations of the procedures to be used for recordkeeping, surface water handling procedures, excavation and backfilling, waste segregation burial coordinates, vehicle and equipment movement, use of roadways, leachate collection systems, sampling and monitoring procedures, monitoring wells, environmental emergency contingency plans, and security measures to protect against vandalism and unauthorized waste placements. EPA guidelines entitled "Thermal Processing and Land Disposal of Solid Waste" (39 FR 29337, Aug.

14, 1974) are a useful reference in preparation of this plan. If the facility is to be used to dispose of liquid wastes containing between 50 ppm and 500 ppm PCB, the operations plan must include procedures to determine that liquid PCBs to be disposed of at the landfill do not exceed 500 ppm PCB and measures to prevent the migration of PCBs from the landfill. Bulk liquids not exceeding 500 ppm PCBs may be disposed of provided such waste is pretreated and/or stabilized (e.g., chemically fixed, evaporated, mixed with dry inert absorbant) to reduce its liquid content or increase its solid content so that a non-flowing consistency is achieved to eliminate the presence of free liquids prior to final disposal in a landfill. PCB Container of liquid PCBs with a concentration between 50 and 500 ppm PCB may be disposed of if each container is surrounded by an amount of inert sorbant material capable of absorbing all of the liquid contents of the container.

(iii) Ignitable wastes shall not be disposed of in chemical waste landfills. Liquid ignitable wastes are wastes that have a flash point less than 60 degrees C (140 degrees F) as determined by the following method or an equivalent method: Flash point of liquids shall be determined by a Pensky-Martens Closed Cup Tester, using the protocol specified in ASTM Standard D-93-80, or the Setaflash Closed Tester using the protocol specified in ASTM Standard D-3278-78.

(iv) Records shall be maintained for all PCB disposal operations and shall include information on the PCB concentration in liquid wastes and the three dimensional burial coordinates for PCBs and PCB Items. Additional records shall be developed and maintained as required in § 761.80.

(9) *Supporting facilities.* (i) A six foot woven mesh fence, wall, or similar device shall be placed around the site to prevent unauthorized persons and animals from entering.

(ii) Roads shall be maintained to and within the site which are adequate to support the operation and maintenance of the site without causing safety or nuisance problems or hazardous conditions.

(iii) The site shall be operated and maintained in a manner to prevent safety problems or hazardous conditions resulting from spilled liquids and windblown materials.

(c) *Approval of chemical waste landfills.* Prior to the disposal of any PCBs and PCB Items in a chemical waste landfill, the owner or operator of the landfill shall receive written approval of the Agency Regional Administrator for the Region in which the landfill is located. The approval shall be obtained in the following manner:

(1) *Initial report.* The owner or operator shall submit to the Regional Administrator an initial report which contains:

- (i) The location of the landfill;
- (ii) A detailed description of the landfill including general site plans and design drawings;
- (iii) An engineering report describing the manner in which the landfill complies with the requirements for chemical waste landfills specified in paragraph (b) of this section;
- (iv) Sampling and monitoring equipment and facilities available;
- (v) Expected waste volumes of PCBs;
- (vi) General description of waste materials other than PCBs that are expected to be disposed of in the landfill;
- (vii) Landfill operations plan as required in paragraph (b) of this section;
- (viii) Any local, State, or Federal permits or approvals; and
- (ix) Any schedules or plans for complying with the approval requirements of these regulations.

(2) *Other information.* In addition to the information contained in the report described in paragraph (c)(1) of this section, the Regional Administrator may require the owner or operator to submit any other information that the Regional Administrator finds to be reasonably necessary to determine whether a chemical waste landfill should be approved. Such other information shall be restricted to the types of information required in paragraphs (c)(1) (i) through (ix) of this section.

(3) *Contents of approval.* (i) Except as provided in paragraph (c)(4) of this section the Regional Administrator may not approve a chemical waste landfill for the disposal of PCBs and PCB Items, unless he finds that the

landfill meets all of the requirements of paragraph (b) of this section.

(ii) In addition to the requirements of paragraph (b) of this section, the Regional Administrator may include in an approval any other requirements or provisions that the Regional Administrator finds are necessary to ensure that operation of the chemical waste landfill does not present an unreasonable risk of injury to health or the environment from PCBs. Such provisions may include a fixed period of time for which the approval is valid.

The approval may also include a stipulation that the operator of the chemical waste landfill report to the Regional Administrator any instance when PCBs are detectable during monitoring activities conducted pursuant to paragraph (b)(6) of this section.

(4) *Waivers.* An owner or operator of a chemical waste landfill may submit evidence to the Regional Administrator that operation of the landfill will not present an unreasonable risk of injury to health or the environment from PCBs when one or more of the requirements of paragraph (b) of this section are not met. On the basis of such evidence and any other available information, the Regional Administrator may in his discretion find that one or more of the requirements of paragraph (b) of this section is not necessary to protect against such a risk and may waive the requirements in any approval for that landfill. Any finding and waiver under this paragraph will be stated in writing and included as part of the approval.

(5) *Persons approved.* Any approval will designate the persons who own and who are authorized to operate the chemical waste landfill, and will apply only to such persons, except as provided by paragraph (c)(7) of this section.

(6) *Final approval.* Approval of a chemical waste landfill will be in writing and will be signed by the Regional Administrator. The approval will state all requirements applicable to the approved landfill.

(7) *Transfer of property.* Any person who owns or operates an approved chemical waste landfill must notify EPA at least 30 days before transferring ownership in the property or transferring the right to conduct the

chemical waste landfill operation. The transferor must also submit to EPA, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the transferee will abide by the transferor's EPA chemical waste landfill approval. Within 30 days of receiving such notification and affidavit, EPA will issue an amended approval substituting the transferee's name for the transferor's name, or EPA may require the transferee to apply for a new chemical waste landfill approval. In the latter case, the transferee must abide by the transferor's EPA approval until EPA issues the new approval to the transferee.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and amended at 48 FR 5730, Feb. 8, 1983; 49 FR 28191, July 10, 1984]

§ 761.79 Decontamination.

(a) Any PCB Container to be decontaminated shall be decontaminated by flushing the internal surfaces of the container three times with a solvent containing less than 50 ppm PCB. The solubility of PCBs in the solvent must be five percent or more by weight. Each rinse shall use a volume of the normal diluent equal to approximately ten (10) percent of the PCB Container capacity. The solvent may be reused for decontamination until it contains 50 ppm PCB. The solvent shall then be disposed of as a PCB in accordance with § 761.60(a). Non-liquid PCBs resulting from the decontamination procedures shall be disposed of in accordance with the provisions of § 761.60(a)(4).

(b) Movable equipment used in storage areas shall be decontaminated by swabbing surfaces that have contacted PCBs with a solvent meeting the criteria of paragraph (a) of this section.

NOTE: Precautionary measures should be taken to ensure that the solvent meets safety and health standards as required by applicable Federal regulations.

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982]

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Subpart E—Exemptions

§ 761.80 Manufacturing, processing, and distribution in commerce exemptions.

(a) The Administrator grants the following petitioners an exemption for one year to distribute in commerce PCB small capacitors for purposes of repair:

(1) Advance Transformer Co., Chicago, IL 60618 (PDE-4).

(2) Air Conditioning Contractors of America, Washington, DC 20036 (PDE-7).

(3) Association of Home Appliance Manufacturers, Chicago, IL 60606 (PDE-26.2).

(4) B & B Motor & Control Corp., New York, NY 10012 (PDE-30).

(5) Complete-Reading Electric Co., Hillside, IL 60162 (PDE-48).

(6) Dunham-Bush, Inc., Harrisonburg, VA 22801 (PDE-71).

(7) Emerson Quiet Kool Corp., Woodbridge, NJ 07095 (PDE-84).

(8) Harry Alter Co., Chicago, IL 60609 (PDE-111).

(9) Minnesota Mining and Manufacturing Co., St. Paul, MN 55133 (PDE-157.1).

(10) Motors & Armatures, Inc., Hauppauge, NY 11788 (PDE-161).

(11) National Association of Electrical Distributors, Stamford, CT 06901 (PDE-163).

(12) National Capacitor Corp., Garden Grove, CA 92641 (PDE-165).

(13) Service Supply Co., Phoenix, AZ 85013 (PDE-237).

(14) Wedzeb Enterprises, Inc., Lebanon, IN 46052 (PDE-297).

(15) Westinghouse Electric Corp., Pittsburgh, PA 15222 (PDE-298).

(b) The Administrator grants the following petitioners an exemption for one year to distribute in commerce PCB equipment containing PCB small capacitors:

(1) Advance Transformer Co., Chicago, IL 60618 (PDE-4).

(2) Coleman Co., Inc., Wichita, KS 67201 (PDE-45.1).

(3) Donn Corp., Westlake, OH 44145 (PDE-63).

(4) Dunham-Bush, Inc., Harrisonburg, VA 22801 (PDE-71).

(5) Emerson Quiet Kool Corp., Woodbridge, NJ 07095 (PDE-84).

(6) Friedrich Air Conditioning & Refrigeration Co., San Antonio, TX 78295 (PDE-93).

(7) Gould, Inc., Electric Motor Division, St. Louis, MO 63166 (PDE-103).

(8) GTE Products Corp., Danvers, MA 01923 (PDE-105).

(9) King-Seeley Thermos Co., Queen Products Division, Albert Lea, MN 56007 (PDE-139).

(10) L.E. Mason Co., Red Dot Division, Boston, MA 02136 (PDE-223).

(11) Minnesota Mining and Manufacturing Co., St. Paul, MN 55133 (PDE-157.3).

(12) National Association of Electrical Distributors, Stamford, CT 06901 (PDE-163).

(13) Royalite Co., Flint, MI 48502 (PDE-231).

(14) Sola Electric, Unit of General Signal, Elk Grove Village, IL 60007 (PDE-246).

(15) Transco, Inc., West Columbia, SC 29169 (PDE-276.1).

(16) Westinghouse Electric Corp., Pittsburgh, PA 15222 (PDE-298).

(c) The Administrator grants the following petitioners an exemption for one year to process PCB small capacitors and PCB equipment containing PCB small capacitors into other equipment and to distribute in commerce that equipment:

(1) Advance Transformer Co., Chicago, IL 60618 (PDE-4).

(2) Gould, Inc., Electric Motor Division, St. Louis, MO 63166 (PDE-103).

(3) GTE Products Corp., Danvers, MA 01923 (PDE-105).

(4) L.E. Mason Co., Red Dot Division, Boston, MA 02136 (PDE-223).

(5) Westinghouse Electric Corp., Pittsburgh, PA 15222 (PDE-298).

(d) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce PCB-contaminated fluid for purposes of servicing customers' transformers:

(1) Electrical Apparatus Service Association, St. Louis, MO 63132 (PDE-77), except for Ward Transformer Co., Inc.

(2) Ohio Transformer Corp., Louisville, OH 44641 (PDE-173).

(3) T & R Electric Supply Co., Inc., Colman, SD 57017 (PDE-265).

(4) Temco, Inc., Corpus Christi, TX 78410 (PDE-268).

(e) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce PCB-contaminated fluid in buying and selling used PCB-contaminated transformers:

(1) Electrical Apparatus Service Association, St. Louis, MO 63132 (PDE-77), except for Ward Transformer Co., Inc.

(2) Ohio Transformer Corp., Louisville, OH 44641 (PDE-173).

(3) Temco, Inc., Corpus Christi, TX 78410 (PDE-268).

(f) The Administrator grants the following petitioners an exemption for one year to manufacture small quantities of PCBs for research and development:

(1) California Bionuclear Corp., Sun Valley, CA 91352 (ME-13).

(2) Foxboro Co., North Haven, CT 06473 (ME-6).

(3) ULTRA Scientific, Inc., Hope, RI 02831 (ME-99.1).

(g) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce small quantities of PCBs for research and development:

(1) California Bionuclear Corp., Sun Valley, CA 91352 (PDE-38.1).

(2) Chem Service, Inc., West Chester, PA 19380 (PDE-41).

(3) Foxboro Co., North Haven, CT 06473 (PDE-21.1).

(4) PolyScience Corp., Niles, IL 60648 (PDE-178).

(5) ULTRA Scientific, Inc., Hope, RI 02831 (PDE-282.1).

(h) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce PCBs for use as a mounting medium in microscopy for all purposes:

(1) McCrone Accessories & Components, Division of Walter C. McCrone Associates, Inc., Chicago, IL 60616 (PDE-149).

(2) R.P. Cargille Laboratories, Inc., Cedar Grove, NJ 07009 (PDE-181), provided that petitioner stores the PCBs it processes and distributes in commerce in accordance with the storage for disposal requirements of 40 CFR 761.65(b).

(i) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce PCBs for use as an immersion oil in low fluorescence microscopy (other than capillary microscopy):

(1) R.P. Cargille Laboratories, Inc., Cedar Grove, NJ 07009 (PDE-181), provided that petitioner stores the PCBs it processes and distributes in commerce in accordance with the storage for disposal requirements of 40 CFR 761.65(b).

(j) The Administrator grants the following petitioners an exemption for one year to process and distribute in commerce small quantities of PCBs for use as an optical liquid:

(1) R.P. Cargille Laboratories, Inc., Cedar Grove, NJ 07009 (PDE-181), provided that petitioner stores the PCBs it processes and distributes in commerce in accordance with the storage for disposal requirements of 40 CFR 761.65(b).

(k) The Administrator grants the following petitioners an exemption for one year to distribute in commerce previously imported and repaired PCB equipment containing PCB small capacitors:

(1) Honeywell, Inc., Waltham, MA 02154 (PDE-119).

(l) The Administrator grants the following petitioners an exemption for one year to import samples of PCB-containing fluid taken from PCB transformers for purposes of testing and analysis:

(1) Dow Corning Corp., Midland, MI 48460 (ME-31.1).

(m) The Administrator grants the following petitioners an exemption for one year to process and export small quantities of PCBs for research and development:

(1) Chem Service, Inc., West Chester, PA 19380 (PDE-41).

(2) Foxboro Co., North Haven, CT 06473 (PDE-21.1).

(3) PolyScience Corp., Niles, IL 60648 (PDE-178).

(4) ULTRA Scientific, Inc., Hope, RI 02831 (PDE-282.1).

(n) The one-year exemption granted to petitioners in paragraphs (f), (g), (l) and (m) of this section shall be renewed automatically unless a petitioner notifies EPA of any increase in the

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amount of PCBs to be manufactured, imported, processed, distributed in commerce, or exported or any change in the manner of manufacture, processing, distribution in commerce, or export of PCBs. EPA will consider the submission of such information to be a renewed petition for exemption. EPA will evaluate the information in the renewed exemption petition, publish a proposed rule for public comments, and issue a final rule either granting or denying the exemption. Until EPA acts on the renewed exemption petition, the petitioner will be allowed to continue the activities for which it requests exemption.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[49 FR 28171, July 10, 1984]

Subparts F-1—[Reserved]

Subpart J—Records and Reports

§ 761.180 Records and monitoring.

This section contains recordkeeping and reporting requirements that apply to PCBs, PCB Items, and PCB storage and disposal facilities that are subject to the requirements of the part.

(a) *PCBs and PCB Items in service or projected for disposal.* Beginning July 2, 1978, each owner or operator of a facility using or storing at one time at least 45 kilograms (99.4 pounds) of PCBs contained in PCB Container(s) or one or more PCB Transformers, or 50 or more PCB Large High or Low Voltage Capacitors shall develop and maintain records on the disposition of PCBs and PCB Items. These records shall form the basis of an annual document prepared for each facility by July 1 covering the previous calendar year. Owners or operators with one or more facilities that use or store PCBs and PCB Items in the quantities described above may maintain the records and documents at one of the facilities that is normally occupied for 8 hours a day, provided the identity of this facility is available at each facility using or storing PCBs and PCB Items. The records and documents shall be maintained for at least five years after the facility ceases using or storing PCBs and PCB Items in the prescribed

quantities. The following information for each facility shall be included in the annual document:

(1) The dates when PCBs and PCB Items are removed from service, are placed into storage for disposal, and are placed into transport for disposal. The quantities of the PCBs and PCB Items shall be indicated using the following breakdown:

(i) Total weight in kilograms of any PCBs and PCB Items in PCB Containers including the identification of container contents such as liquids and capacitors;

(ii) Total number of PCB Transformers and total weight in kilograms of any PCBs contained in the transformers; and

(iii) Total number of PCB Large High or Low Voltage Capacitors.

(2) For PCBs and PCB Items removed from service, the location of the initial disposal or storage facility and the name of the owner or operator of the facility.

(3) Total quantities of PCBs and PCB Items remaining in service at the end of the calendar year using the following breakdown:

(i) Total weight in kilograms of any PCBs and PCB Items in PCB Containers, including the identification of container contents such as liquids and capacitors;

(ii) Total number of PCB Transformers and total weight in kilograms of any PCBs contained in the transformers; and

(iii) Total number of PCB Large High or Low Voltage Capacitors.

(b) *Disposal and storage facilities.* Each owner or operator of a facility (including high efficiency boiler operations) used for the storage or disposal of PCBs and PCB Items shall by July 1, 1979 and each July 1 thereafter prepare and maintain a document that includes the information required in paragraph (b)(1) thru (4) of this section for PCBs and PCB Items that were handled at the facility during the previous calendar year. The document shall be retained at each facility for at least 5 years after the facility is no longer used for the storage or disposal of PCBs and PCB Items except that in the case of chemical waste landfills, the document shall be maintained at

least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs and PCB Items. The documents shall be available at the facility for inspection by authorized representatives of the Environmental Protection Agency. If the facility ceases to be used for PCB storage or disposal, the owner or operator of such facility shall notify within 60 days the EPA Regional Administrator of the region in which the facility is located that the facility has ceased storage or disposal operations. The notice shall specify where the documents that are required to be maintained by this paragraph are located. The following information shall be included in each document:

(1) The date when any PCBs and PCB Items were received by the facility during the previous calendar year for storage or disposal, and identification of the facility and the owner or operator of the facility from whom the PCBs were received;

(2) The date when any PCBs and PCB Items were disposed of at the disposal facility or transferred to another disposal or storage facility, including the identification of the specific types of PCBs and PCB Items that were stored or disposed of;

(3) A summary of the total weight in kilograms of PCBs and PCB Articles in containers and the total weight of PCBs contained in PCB Transformers, that have been handled at the facility during the previous calendar year. This summary shall provide totals of the above PCBs and PCB Items which have been:

(i) Received during the year;

(ii) Transferred to other facilities during the year; and

(iii) Retained at the facility at the end of the year. In addition the contents of PCB Containers shall be identified. When PCB Containers and PCBs contained in a transformer are transferred to other storage or disposal facilities, the identification of the facility to which such PCBs and PCB Items were transferred shall be included in the document.

(4) Total number of any PCB Articles or PCB Equipment not in PCB Containers, received during the calendar year, transferred to other storage

or disposal facilities during the calendar year, or remaining on the facility site at the end of the calendar year. The identification of the specific types of PCB Articles and PCB Equipment received, transferred, or remaining on the facility site shall be indicated. When PCB Articles and PCB Equipment are transferred to other storage or disposal facilities, the identification of the facility to which the PCB Articles and PCB Equipment were transferred must be included.

NOTE: Any requirements for weights in kilograms of PCBs may be calculated values if the internal volume of containers and transformers is known and included in the reports, together with any assumptions on the density of the PCBs contained in the containers or transformers.

(c) *Incineration facilities.* Each owner or operator of a PCB incinerator facility shall collect and maintain for a period of 5 years from the date of collection the following information, in addition to the information required in paragraph (b) of this section:

(1) When PCBs are being incinerated, the following continuous and short-interval data:

(i) Rate and quantity of PCBs fed to the combustion system as required in § 761.70(a)(3);

(ii) Temperature of the combustion process as required in § 761.70(a)(4); and

(iii) Stack emission product to include O₂, CO, and CO₂, as required in § 761.70(a)(7).

(2) When PCBs are being incinerated, data and records on the monitoring of stack emissions as required in § 761.70(a)(6).

(3) Total weight in kilograms of any solid residues generated by the incineration of PCBs and PCB Items during the calendar year, the total weight in kilograms of any solid residues disposed of by the facility in chemical waste landfills, and the total weight in kilograms of any solid residues remaining on the facility site.

(4) When PCBs and PCB Items are being incinerated, additional periodic data shall be collected and maintained as specified by the Regional Administrator pursuant to § 761.70(d)(4).

(5) Upon any suspension of the operation of any incinerator pursuant to § 761.70(a)(8), the owner or operator of such an incinerator shall prepare a document. The document shall, at a minimum, include the date and time of the suspension and an explanation of the circumstances causing the suspension of operation. The document shall be sent to the appropriate Regional Administrator within 30 days of any such suspension.

(d) *Chemical waste landfill facilities.* Each owner or operator of a PCB chemical waste landfill facility shall collect and maintain until at least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs the following information in addition to the information required in paragraph (b) of this section:

(1) Any water analysis obtained in compliance with § 761.75(b)(6)(iii); and

(2) Any operations records including burial coordinates of wastes obtained in compliance with § 761.75(b)(8)(ii).

(e) *High efficiency boiler facilities.* Each owner or operator of a high efficiency boiler used for the disposal of liquids between 50 and 500 ppm PCB shall collect and maintain for a period of 5 years the following information, in addition to the information required in paragraph (b) of this section:

(1) For each month PCBs are burned in the boiler the carbon monoxide and excess oxygen data required in § 761.60(a)(2)(iii)(A)(8) and § 761.60(a)(3)(iii)(A)(8);

(2) The quantity of PCBs burned each month as required in § 761.60(a)(2)(iii)(A)(7) and § 761.60(a)(3)(iii)(A)(7); and

(3) For each month PCBs (other than mineral oil dielectric fluid) are burned, chemical analysis data of the waste as required in § 761.60(a)(3)(iii)(B)(6).

(f) *Retention of special records by storage and disposal facilities.* In addition to the information required to be maintained under paragraphs (b), (c), (d) and (e) of this section, each owner or operator of a PCB storage or disposal facility (including high efficiency boiler operations) shall collect and maintain for the time period specified in paragraph (b) of this section the following data:

(1) All documents, correspondence, and data that have been provided to the owner or operator of the facility by any State or local government agency and that pertain to the storage or disposal of PCBs and PCB Items at the facility.

(2) All documents, correspondence, and data that have been provided by the owner or operator of the facility to any State or local government agency and that pertain to the storage or disposal of PCBs and PCB Items at the facility.

(3) Any applications and related correspondence sent by the owner or operator of the facility to any local, State, or Federal authorities in regard to waste water discharge permits, solid waste permits, building permits, or other permits or authorizations such as those required by §§ 761.70(d) and 761.41(c).

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605)

[44 FR 31542, May 31, 1979. Redesignated at 47 FR 19527, May 6, 1982, and 47 FR 37360, Aug. 25, 1982; 49 FR 28191, July 10, 1984]

§ 761.185 Certification program and retention of records by importers and persons generating PCBs in excluded manufacturing processes.

(a) In addition to meeting the basic requirements of § 761.1(f) and the definition of excluded manufacturing processes at § 761.3, manufacturers with processes inadvertently generating PCBs and importers of products containing inadvertently generated PCBs must report to EPA any excluded manufacturing process or imports for which the concentration of PCBs in products leaving the manufacturing site or imported is greater than 2 micrograms per gram (2 µg/g, roughly 2 ppm) for any resolvable gas chromatographic peak. Such reports must be filed by October 1, 1984 or, if no processes or imports require reports at the time, within 90 days of having processes or imports for which such reports are required.

(b) Manufacturers required to report by paragraph (a) of this section must transmit a letter notifying EPA of the number, the type, and the location of excluded manufacturing processes in

which PCBs are generated when the PCB level in products leaving any manufacturing site is greater than 2 µg/g for any resolvable gas chromatographic peak. Importers required to report by paragraph (a) of this section must transmit a letter notifying EPA of the concentration of PCBs in imported products when the PCB concentration of products being imported is greater than 2 µg/g for any resolvable gas chromatographic peak. Persons must also certify the following:

(1) Their compliance with all applicable requirements of § 761.1(f), including any applicable requirements for air and water releases and process waste disposal.

(2) Whether determinations of compliance are based on actual monitoring of PCB levels or on theoretical assessments.

(3) That such determinations of compliance are being maintained.

(4) If the determination of compliance is based on a theoretical assessment, the letter must also notify EPA of the estimated PCB concentration levels generated and released.

(c) Any person who reports pursuant to paragraph (a) of this section:

(1) Must have performed either a theoretical analysis or actual monitoring of PCB concentrations.

(2) Must maintain for a period of three years after ceasing process operations or importation, or for seven years, whichever is shorter, records containing the following information:

(i) *Theoretical analysis.* Manufacturers records must include: the reaction or reactions believed to be generating PCBs; the levels of PCBs generated; and the levels of PCBs released. Importers records must include: the reaction or reactions believed to be generating PCBs and the levels of PCBs generated; the basis for all estimations of PCB concentrations; and the name and qualifications of the person or persons performing the theoretical analysis; or

(ii) *Actual monitoring.* (A) The method of analysis.

(B) The results of the analysis, including data from the Quality Assurance Plan.

(C) Description of the sample matrix.

(D) The name of the analyst or analysts.

(E) The date and time of the analysis.

(F) Numbers for the lots from which the samples are taken.

(d) The certification required by paragraph (b) of this section must be signed by a responsible corporate officer. This certification must be maintained by each facility or importer for a period of three years after ceasing process operation or importation, or for seven years, whichever is shorter, and must be made available to EPA upon request. For the purpose of this section, a responsible corporate officer means:

(1) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.

(2) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25,000,000 (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(e) Any person signing a document under paragraph (d) of this section shall also make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information. Based on my inquiry of the person or persons directly responsible for gathering information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for falsifying information, including the possibility of fines and imprisonment for knowing violations.

Dated: _____
Signature: _____

(f) This report must be submitted to the U.S. Environmental Protection Agency, Document Processing Center, P.O. Box 2070, Rockville, MD 20852, Attention: PCB Notification. This report must be submitted by October

1, 1984 or within 90 days of starting up processes or commencing importation of PCBs.

(g) This certification process must be repeated whenever process conditions are significantly modified to make the previous certification no longer valid.

(Approved by the Office of Management and Budget under control number 2070-0008)

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605))

[49 FR 28191, July 10, 1984; 49 FR 33019, Aug. 20, 1984]

§ 761.187 Reporting importers and by persons generating PCBs in excluded manufacturing processes.

In addition to meeting the basic requirements of § 761.1(f) and the definition of excluded manufacturing process at § 761.3, PCB-generating manufacturing processes or importers of PCB-containing products shall be considered "excluded manufacturing processes" only when the following conditions are met:

(a) Data are reported to the EPA by the owner/operator or importer concerning the total quantity of PCBs in product from excluded manufacturing processes leaving any manufacturing site in any calendar year when such quantity exceeds 0.0025 percent of that site's rated capacity for such manufacturing processes as of October 1, 1984; or the total quantity of PCBs imported in any calendar year when such quantity exceeds 0.0025 percent of the average total quantity of such product containing PCBs imported by such importer during the years 1978, 1979, 1980, 1981 and 1982.

(b) Data are reported to the EPA by the owner/operator concerning the total quantity of inadvertently generated PCBs released to the air from excluded manufacturing processes at any manufacturing site in any calendar year when such quantity exceeds 10 pounds.

(c) Data are reported to the EPA by the owner/operator concerning the total quantity of inadvertently generated PCBs released to water from excluded manufacturing processes from any manufacturing site in any calendar

year when such quantity exceeds 10 pounds.

(d) These reports must be submitted to the U.S. Environmental Protection Agency, Document Processing Center, P.O. Box 2070, Rockville, Maryland 20852, Attention: PCB Notification.

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605))

(Approved by the Office of Management and Budget under control number 2070-0008)

[49 FR 28192, July 10, 1984]

§ 761.193 Maintenance of monitoring records by persons who import, manufacture, process, distribute in commerce, or use chemicals containing inadvertently generated PCBs.

(a) Persons who import, manufacture, process, distribute in commerce, or use chemicals containing PCBs present as a result of inadvertent generation or recycling who perform any actual monitoring of PCB concentrations must maintain records of any such monitoring for a period of three years after a process ceases operation or importing ceases, or for seven years, whichever is shorter.

(b) Monitoring records maintained pursuant to paragraph (a) of this section must contain:

(1) The method of analysis.

(2) The results of the analysis, including data from the Quality Assurance Plan.

(3) Description of the sample matrix.

(4) The name of the analyst or analysts.

(5) The date and time of the analysis.

(6) Numbers for the lots from which the samples are taken.

(Approved by the Office of Management and Budget under control number 2070-0008)

(Sec. 6, Pub. L. 94-469, 90 Stat. 2020 (15 U.S.C. 2605))

[49 FR 28193, July 10, 1984]

DIVISION 110
HAZARDOUS WASTE MANAGEMENT

Polychlorinated Biphenyls (PCBs)

Subdivision A: General

- 340-110-001 Purpose and applicability.
- 340-110-003 Definitions.

Subdivision B: (Reserved)

Subdivision C: Marking of PCBs and PCB Items

- 340-110-040 Marking requirements.
- 340-110-045 Marking formats.

Subdivision D: Disposal of PCBs and PCB Items

- 340-110-060 Disposal requirements.
- 340-110-065 Storage for disposal.
- 340-110-070 Incineration.
- 340-110-075 PCB landfills.
- 340-110-077 Permits.
- 340-110-079 Decontamination.

Subdivisions E - I: (Reserved)

Subdivision J: Records and Reports

- 340-110-080 Records and monitoring.

Authority: ORS Chapter 468, including 468.020 and 468.900 to .921;
459, including 459.440; and 183.

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110-001

Subdivision A: General

Purpose and applicability.

340-110-001 (1) The purpose of this Division is to establish requirements for the storage, disposal and marking prior to disposal of PCBs and PCB items.

(2) This Division applies to all persons who dispose of PCBs or PCB items. Unless it is otherwise specifically provided, the terms PCB and PCBs are used in this rule to refer to any chemical substances and combinations of substances that contain 50 ppm (on a dry weight basis) or greater of PCBs, as defined in rule 340-110-003, including any byproduct, intermediate or impurity manufactured at any point in a process. Any chemical substance and combinations of substances that contain less than 50 ppm PCBs because of any dilution, shall be included as PCB and PCBs unless otherwise specifically provided. Substances that are regulated by this rule include, but are not limited to, dielectric fluids, contaminated solvents, oils, waste oils, heat transfer fluids, hydraulic fluids, paints, sludges, slurries, dredge spoils, soils, materials contaminated as a result of spills, and other chemical substances or combination of substances, including impurities and byproducts.

(3) These regulations are in addition to and do not preempt any local, state or federal statutes or regulations.

Definitions.

340-110-003 For the purpose of this Division:

"Capacitor" means a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric. Types of capacitors are as follows:

(1) "Small capacitor" means a capacitor which contains less than 3 lbs. of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 100 cubic inches may be considered to contain less than 3 lbs. of dielectric fluid and a capacitor whose total volume is more than 200 cubic inches must be considered to contain more than 3 lbs. of dielectric fluid. A capacitor whose total volume is between 100 and 200 cubic inches may be considered to contain less than 3 lbs. of dielectric fluid if the total weight of the capacitor is less than 9 lbs.

(2) "Large high voltage capacitor" means a capacitor which contains 3 lbs. or more of dielectric fluid and which operates at 2000 volts (a.c. or d.c.) or above.

(3) "Large low voltage capacitor" means a capacitor which contains 3 lbs. or more of dielectric fluid and which operates below 2000 volts (a.c. or d.c.).

"Department" means the Department of Environmental Quality.

"Disposal" means intentionally or accidentally to discard, throw away or otherwise complete or terminate the useful life of PCBs and PCB items. Disposal includes spills, leaks and other discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating or confining PCBs and PCB items.

"Incinerator" means an engineered device using controlled flame combustion to thermally degrade PCBs and PCB items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns and high temperature boilers.

"Leak" or "leaking" means any instance in which a PCB article, PCB container or PCB equipment has any PCBs on any portion of its external surface.

"Mark" means the descriptive name, instructions, cautions or other information applied to PCBs and PCB items, or other objects subject to these regulations.

"Marked" means the marking of PCB items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label or by any other method that meets the requirements of these regulations.

"Mixture" means any combination of two or more chemical substances if the combination does not occur in nature and is not, in whole or in part, the result of a chemical reaction; except that such term does include any combination which occurs, in whole or in part, as a result of a chemical reaction if none of the chemical substances comprising the combination is a new chemical substance and if the combination could have been manufactured for commercial purposes without a chemical reaction at the time the chemical substances comprising the combination were combined.

"Municipal solid wastes" means garbage, refuse, sludges, wastes and other discarded materials resulting from residential and nonindustrial operations and activities, such as household activities, office functions and commercial housekeeping wastes.

"PCB" and "PCBs" means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance. (See rule 340-110-001(2), for applicable concentrations of PCBs. PCB and PCBs as contained in PCB items are defined in this rule.)

"PCB article" means any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB article" includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB article.

"PCB article container" means any package, can, bottle, bag, barrel, drum, tank or other device used to contain PCB articles or PCB equipment, and whose surface(s) has not been in direct contact with PCBs.

"PCB container" means any package, can, bottle, bag, barrel, drum, tank or other device that contains PCBs or PCB articles and whose surface(s) has been in direct contact with PCBs.

"PCB equipment" means any manufactured item, other than a PCB container or a PCB article container, which contains a PCB article or other PCB equipment, and includes microwave ovens, electronic equipment and fluorescent light ballasts and fixtures.

"PCB item" is defined as any PCB article, PCB article container, PCB container or PCB equipment, that deliberately or unintentionally contains or has as a part of it any PCB or PCBs at a concentration of 50 ppm or greater.

"PCB landfill" means a landfill at which protection against risk of injury to health or the environment from migration of PCBs to land, water or the atmosphere is provided from PCBs and PCB items deposited therein by locating, engineering and operating the landfill as specified in rule 340-110-075.

"PCB transformer" means any transformer that contains 500 ppm PCB or greater.

"PCB-contaminated electrical equipment" means any electrical equipment, including but not limited to transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets and cable, that contain 50 ppm or greater PCB, but less than 500 ppm PCB. Oil-filled electrical equipment other than circuit breakers, reclosers and cable whose PCB concentration is unknown must be assumed to be a PCB-contaminated electrical equipment.

"Person" means the United States, the state or a public or private corporation, local government unit, public agency, individual, partnership, association, firm, trust, estate or any other legal entity.

"Storage for disposal" means temporary storage of PCBs that have been designated for disposal.

"Transport vehicle" means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle.

"Waste oil" means used products primarily derived from petroleum, which include, but are not limited to, fuel oils, motor oils, gear oils, cutting oils, transmission fluids, hydraulic fluids and dielectric fluids.

Marking requirements.

340-110-040 (1) Each of the following items, when removed from service for disposal, shall be marked as illustrated in Figure 1 of rule 340-110-045(1): The mark illustrated in Figure 1 is referred to as M_L throughout this Subdivision.

- (a) PCB containers (see also section (3) of this rule);
 - (b) PCB transformers (marking of PCB-contaminated electrical equipment is not required);
 - (c) PCB large high voltage capacitors;
 - (d) Equipment containing a PCB transformer or a PCB large high voltage capacitor;
 - (e) PCB large low voltage capacitors;
 - (f) Electric motors using PCB coolants (see also section (3) of this rule);
 - (g) Hydraulic systems using PCB hydraulic fluid (see also section (3) of this rule);
 - (h) Heat transfer systems (other than PCB transformers) using PCBs (see also section (3) of this rule);
 - (i) PCB article containers containing articles or equipment that must be marked under subsections (1)(a) through (h) above;
 - (j) Each storage area used to store PCBs and PCB items for disposal.
- (2) Each transport vehicle shall be marked on each end and side with M_L as described in rule 340-110-045(1) if it is loaded with PCB containers that contain more than 99.4 lbs. of PCBs in the liquid phase or with one or more PCB transformers (see also section (3) of this rule);
- (3) PCB items in subsections (1)(a), (f), (g) and (h) containing PCBs in concentrations of 50 to 500 ppm and applicable transport vehicles in section (2) of this rule loaded with PCB containers that contain more than 99.4 lbs. of liquid PCBs shall also be marked with mark M_L as described in rule 340-110-045(1).
- (4) Where mark M_L is specified but the PCB article or PCB equipment is too small to accommodate the smallest permissible size of mark M_L , mark M_S as described in rule 340-110-045(2) may be used instead of mark M_L .
- (5) All marks required by this Subdivision must be placed in a position on the exterior of the PCB items or transport vehicles so that the marks can be easily read by any persons inspecting or servicing the marked PCB items or transport vehicles.

Marking formats.

340-110-045 (1) Large PCB Mark - M_L . Mark M_L shall be as shown in Figure 1, letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB article, PCB equipment or PCB container. The size of the mark shall be at least 6 inches on each side. If the PCB article or PCB equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 2 inches on each side.

(2) Small PCB Mark - M_S . Mark M_S shall be as shown in Figure 2, letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB article, PCB equipment or PCB container. The mark shall be a rectangle 1 inch by 2 inches. If the PCB article or PCB equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 0.4 by 0.8 inches.

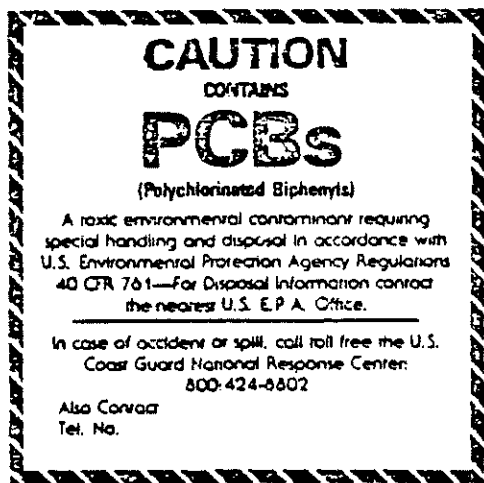


Figure 1

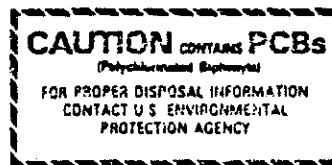


Figure 2

Subdivision D: Disposal of PCBs and PCB Items

(Comment: This Subdivision does not require removal of PCBs and PCB items from service and disposal earlier than would normally be the case. However, when PCBs and PCB items are removed from service and disposed of, disposal must be undertaken in accordance with these regulations. PCBs and PCB items landfilled prior to February 17, 1978 (the date the federal PCB regulations were initially adopted), are not required to be removed for disposal. However, if such PCBs and PCB items are removed from a disposal site, they must be disposed of in accordance with this Subdivision.)

Disposal requirements.

340-110-060 (1) PCBs. (a) Except as provided in subsections (1)(b), (c), (d) and (e) of this rule, PCBs must be disposed of in an incinerator which complies with rule 340-110-070.

(b) Mineral oil dielectric fluid from PCB-contaminated electrical equipment containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, must be disposed of in one of the following:

(A) In an incinerator that complies with rule 340-110-070;

(B) In a PCB landfill that complies with rule 340-110-075 if information is provided to the owner or operator of the chemical waste landfill that shows that the mineral oil dielectric fluid does not exceed 500 ppm PCB and is not an ignitable waste as described in rule 340-110-075(2)(h)(C);

(C) In a high efficiency boiler provided that:

(i) The boiler complies with the following criteria:

(I) The boiler is rated at a minimum of 50 million Btu/hour;

(II) If the boiler uses natural gas or oil as the primary fuel, the carbon monoxide concentration in the stack is 50 ppm or less and the excess oxygen is at least 3% when PCBs are being burned;

(III) If the boiler uses coal as the primary fuel, the carbon monoxide concentration in the stack is 100 ppm or less and the excess oxygen is at least 3% when PCBs are being burned;

(IV) The mineral oil dielectric fluid does not comprise more than 10% (on a volume basis) of the total fuel feed rate;

(V) The mineral oil dielectric fluid is not fed into the boiler unless the boiler is operating at its normal operating temperature (this prohibits feeding these fluids during either start up or shut down operations);

(VI) The owner or operator of the boiler:

(a) Continuously monitors and records the carbon monoxide concentration and excess oxygen percentage in the stack gas while burning mineral oil dielectric fluid; or

(b) If the boiler will burn less than 30,000 gallons of mineral oil dielectric fluid per year, measures and records the carbon monoxide concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 minutes while burning mineral oil dielectric fluid.

(VII) The primary fuel feed rates, mineral oil dielectric fluid feed rates, and total quantities of both primary fuel and mineral oil dielectric fluid fed to the boiler are measured and recorded at regular intervals of no longer than 15 minutes while burning mineral oil dielectric fluid.

(VIII) The carbon monoxide concentration and the excess oxygen percentage are checked at least once every hour that mineral oil dielectric fluid is burned. If either measurement falls below the levels specified

in this rule, the flow of mineral oil dielectric fluid to the boiler shall be stopped immediately.

(ii) Thirty days before any person burns mineral oil dielectric fluid in the boiler, the person gives written notice to the Department and that the notice contains the following information:

(I) The name and address of the owner or operator of the boiler and the address of the boiler;

(II) The boiler rating in units of Btu/hour;

(III) The carbon monoxide concentration and the excess oxygen percentage in the stack of the boiler when it is operated in a manner similar to the manner in which it will be operated when mineral oil dielectric fluid is burned; and

(IV) The type of equipment, apparatus and procedures to be used to control the feed of mineral oil dielectric fluid to the boiler and to monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack.

(iii) When burning mineral oil dielectric fluid, the boiler must operate at a level of output no less than the output at which the measurements required under sub-subparagraph (1)(b)(C)(ii)(III) of this rule were taken.

(iv) Any person burning mineral oil dielectric fluid in a boiler obtains the following information and retains the information for five years at the boiler location:

(I) The data required to be collected under sub-subparagraphs (1)(b)(C)(i)(VI) and (VII) of this rule; and

(II) The quantity of mineral oil dielectric fluid burned in the boiler each month;

(D) In a facility that is permitted in accordance with rule 340-110-060(5). For the purpose of burning mineral oil dielectric fluid, an applicant under rule 340-110-060(5) must show that his combustion process destroys PCBs as efficiently as does a high efficiency boiler, as defined in paragraph (1)(b)(C) of this rule, or a rule 340-110-070 permitted incinerator.

(c) Liquids, other than mineral oil dielectric fluid, containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, shall be disposed of:

(A) In an incinerator that complies with rule 340-110-070;

(B) In a PCB landfill that complies with rule 340-110-075 if information is provided to the owner or operator of the chemical waste landfill that shows that the waste does not exceed 500 ppm PCB and is not an ignitable waste as described in rule 340-110-075(2)(h)(C);

(C) In a high efficiency boiler provided that:

(i) The boiler complies with the following criteria:

(I) The boiler is rated at a minimum of 50 million Btu/hour;

(II) If the boiler uses natural gas or oil as the primary fuel, the carbon monoxide concentration in the stack is 50 ppm or less and the excess oxygen is at least 3% when PCBs are being burned;

(III) If the boiler uses coal as the primary fuel, the carbon monoxide concentration in the stack is 100 ppm or less and the excess oxygen is at least 3% when PCBs are being burned;

(IV) The waste does not comprise more than 10% (on a volume basis) of the total fuel feed rate;

(V) The waste is not fed into the boiler unless the boiler is operating at its normal operating temperature (this prohibits feeding these fluids during either start up or shut down operations);

(VI) The owner or operator of the boiler must:

(a) Continuously monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack gas while burning waste fluid; or

(b) If the boiler will burn less than 30,000 gallons of waste fluid per year, measure and record the carbon monoxide concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 minutes while burning waste fluid;

(VII) The primary fuel feed rates, waste fluid feed rates, and total quantities of both primary fuel and waste fluid fed to the boiler must be measured and recorded at regular intervals of no longer than 15 minutes while burning waste fluid; and

(VIII) The carbon monoxide concentration and the excess oxygen percentage are checked at least once every hour that the waste is burned. If either measurement falls below the levels specified in this rule, the flow of waste to the boiler shall be stopped immediately.

(ii) Prior to any person burning these liquids in the boiler, a permit must be obtained from the Department and any persons seeking a permit must submit to the Department a request containing at least the following information:

(I) The name and address of the owner or operator of the boiler and the address of the boiler;

(II) The boiler rating in units of Btu/hour;

(III) The carbon monoxide concentration and the excess oxygen percentage in the stack of the boiler when it is operated in a manner similar to the manner in which it will be operated when low concentration PCB liquid is burned; and

(IV) The type of equipment, apparatus and procedures to be used to control the feed of waste fluid to the boiler and to monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack.

(V) The type of waste to be burned (e.g., hydraulic fluid, contaminated fuel oil, heat transfer fluid, etc.);

(VI) The concentration of PCBs and of any other chlorinated hydrocarbon in the waste and the results of analyses using the American Society of Testing and Materials (ASTM) methods as referenced: Carbon and hydrogen content using ASTM D-3178, nitrogen content using ASTM E-258, sulfur content using ASTM D-2784, D-1266 or D-129, chlorine content using ASTM D-808, water and sediment content using ASTM D-2709 or D-1796, ash content using ASTM D-482, calorific value using ASTM D-240, carbon residue using either ASTM D-2158 or D-524, and flash point using ASTM D-93;

(VII) The quantity of wastes estimated to be burned in a 30-day period;

(VIII) An explanation of the procedures to be followed to ensure that burning the waste will not adversely affect the operation of the boiler such that combustion efficiency will decrease.

(iii) On the basis of the information in subparagraph (1)(c)(C)(ii) of this rule and any other available information, the Department may, at its discretion, find that the alternate disposal method will not present an unreasonable risk of injury to health or the environment and permit the use of the boiler;

(iv) When burning PCB wastes, the boiler must operate at a level of output no less than the output at which the measurements required under sub-subparagraph (1)(c)(C)(ii)(III) of this rule were taken; and

(v) Any person burning liquids in boilers permitted in subparagraph (1)(c)(C)(iii) of this rule, must obtain the following information and

retain the information for five years at the boiler location:

(I) The data required to be collected in sub-subparagraphs (1)(c)(C)(i)(VI) and (VII) of this rule;

(II) The quantity of low concentration PCB liquid burned in the boiler each month;

(III) The analysis of the waste required by sub-subparagraph (1)(c)(C)(ii)(VI) of this rule taken once a month for each month during which low concentration PCB liquid is burned in the boiler.

(D) In a facility that is permitted in accordance with rule 340-110-060(5). For the purpose of burning liquids, other than mineral oil dielectric fluid, containing 50 ppm or greater PCB, but less than 500 ppm PCB, an applicant under rule 340-110-060(5) must show that his combustion process destroys PCBs as efficiently as does a high efficiency boiler, as defined in paragraph (1)(b)(C) of this rule, or a rule 340-110-070 incinerator.

(d) Any non-liquid PCBs in the form of contaminated soil, rags or other debris shall be disposed of:

(A) In an incinerator which complies with rule 340-110-070; or

(B) In a PCB landfill which complies with rule 340-110-075.

(Comment: Except as provided in rule 340-110-075(2)(h)(B), liquid PCBs shall not be processed into non-liquid forms to circumvent the high temperature incineration requirements of rule 340-110-060(1).

(e) All dredged materials and municipal sewage treatment sludges that contain PCBs shall be disposed of:

(A) In an incinerator which complies with rule 340-110-070;

(B) In a PCB landfill which complies with rule 340-110-075; or

(C) Upon application, using a disposal method to be permitted by the Department. Applications for disposal in a manner other than prescribed in paragraph (A) or (B) of this subsection above must be made in writing to the Department. The application must contain information that, based on technical, environmental and economic considerations, indicates that disposal in an incinerator or chemical waste landfill is not reasonable and appropriate, and that the alternate disposal method will provide adequate protection to health and the environment. The Department may request other information that it believes to be necessary for evaluation of the alternate disposal method. The permit may contain any appropriate limitations on the alternate method for disposal. In addition to these regulations, the Department shall consider other applicable guidelines, criteria and regulations to ensure that the discharges of dredged material and sludges that contain PCBs and other contaminants are adequately controlled to protect the environment. The person to whom such permit is issued must comply with all limitations contained in the permit.

(f) When storage is desired prior to disposal, PCBs shall be stored in a facility which complies with rule 340-110-065.

(2) PCB articles. (a) Transformers. (A) PCB transformers shall be disposed of in accordance with either of the following:

(i) In an incinerator that complies with rule 340-110-070; or

(ii) In a PCB landfill which complies with rule 340-110-075; Provided, that the transformer is first drained of all free flowing liquid, filled with solvent, allowed to stand for at least 18 hours and then drained thoroughly. PCB liquids that are removed shall be disposed of in accordance with section (1) of this rule. Solvents may include kerosene, xylene, toluene and other solvents in which PCBs are readily soluble. Precautionary measures should be taken, however, that the solvent flushing procedures is conducted in accordance with applicable safety and health

standards as required by federal or state regulations.

(B) PCB-contaminated transformers shall be disposed of by draining all free flowing liquid from the transformer and disposing of the liquid in accordance with subsection (1)(b) of this rule. The disposal of the drained transformer is not regulated by this rule.

(b) PCB capacitors. (A) The disposal of any capacitor shall comply with all requirements of this Subdivision unless it is known from label or name plate information, manufacturer's literature (including documented communications with the manufacturer), or chemical analysis that the capacitor does not contain PCBs.

(B) Any person may dispose of PCB small capacitors as municipal solid waste, unless that person is subject to the requirements of paragraph (2)(b)(D) of this rule.

(C) Any PCB large high or low voltage capacitor which contains 500 ppm or greater PCBs, owned by any person, shall be disposed of in an incinerator that complies with rule 340-110-070.

(D) Any PCB small capacitor owned by any person who manufactures or at any time manufactured PCB capacitors or PCB equipment and acquired the PCB capacitors in the course of such manufacturing shall be disposed of in an incinerator which complies with rule 340-110-070.

(E)(i) Notwithstanding the disposal requirements imposed by paragraph (C) or (D) of this subsection, PCB capacitors may be disposed of in PCB chemical waste landfills that comply with rule 340-110-075 if the EPA publishes a notice in the Federal Register declaring that those landfills are available for such disposal.

(ii) Prior to such disposal, the PCB capacitors shall be placed in one of the Department of Transportation specification containers identified in rule 340-110-065(3)(f) or in containers that comply with 49 CFR 178.118 (specification 17H containers). Large PCB capacitors which are too big to fit inside one of these containers shall be placed in a container with strength and durability equivalent to the DOT specification containers. In all cases, interstitial space in the container shall be filled with sufficient absorbent material (such as sawdust or soil) to absorb any liquid PCBs remaining in the capacitors.

(c) PCB hydraulic machines. PCB hydraulic machines such as die casting machines may be disposed of as municipal solid waste or salvage provided that the machines are drained of all free-flowing liquid and the liquid is disposed of in accordance with the provisions of section (1) of this rule. If the PCB liquid contains 1000 ppm PCB or greater, then the hydraulic machine must be flushed prior to disposal with a solvent containing less than 50 ppm PCB (see transformer solvents comment in subparagraph (2)(a)(A)(ii) of this rule) and the solvent disposed of in accordance with section (1) of this rule.

(d) PCB-contaminated electrical equipment. All PCB-contaminated electrical equipment except capacitors shall be disposed of by draining all free flowing liquid from the electrical equipment and disposing of the liquid in accordance with subsection (1)(b) or (c) of this rule. The disposal of the drained electrical equipment is not regulated by this rule. Capacitors that contain between 50 and 500 ppm PCBs shall be disposed of in an incinerator that complies with rule 340-110-070 or in a PCB landfill that complies with rule 340-110-075.

(e) Other PCB articles. (A) PCB articles with a PCB concentration of 500 ppm or greater must be disposed of:

- (i) In an incinerator that complies with rule 340-110-070; or
- (ii) In a PCB landfill that complies with rule 340-110-075, provided

that all free-flowing liquid PCBs have been thoroughly drained from any articles before the articles are placed in the PCB landfill and that the drained liquids are disposed of in an incinerator that complies with rule 340-110-070.

(B) PCB articles with a PCB concentration between 50 and 500 ppm must be disposed of by draining all free flowing liquid from the article and disposing of the liquid in accordance with subsection (1)(b) or (c) of this rule. The disposal of the drained article is not regulated by this rule.

(f) Storage of PCB articles. Except for a PCB article described in paragraph (2)(b)(B) of this rule and hydraulic machines that comply with the municipal solid waste disposal provisions described in subsection (2)(c) of this rule, any PCB article shall be stored in accordance with rule 340-110-065 prior to disposal.

(3) PCB containers. (a) Unless decontaminated in compliance with rule 340-110-079 or as provided in subsection (3)(b) of this rule, a PCB container shall be disposed of:

(A) In an incinerator which complies with rule 340-110-070; or

(B) In a PCB landfill that complies with rule 340-110-075; provided that if there are PCBs in a liquid state, the PCB container shall first be drained and the PCB liquid disposed of in accordance with section (1) of this rule.

(b) Any PCB container used to contain only PCBs at a concentration less than 500 ppm shall be disposed of as municipal solid wastes; provided that if the PCBs are in a liquid state, the PCB container shall first be drained and the PCB liquid disposed of in accordance with section (1) of this rule.

(c) Prior to disposal, a PCB container shall be stored in a facility which complies with rule 340-110-065.

(4) Spills. (a) Spills, leaks and other uncontrolled discharges of PCBs constitute the disposal of PCBs and shall be reported and managed in accordance with Division 108.

(b) PCBs resulting from the cleanup and removal of spills, leaks or other uncontrolled discharges, must be stored and disposed of in accordance with section (1) of this rule.

(5) Any person who is required to incinerate any PCBs and PCB items under this Subdivision and who can demonstrate that an alternate method of destroying PCBs and PCB items exists and that this alternative method can achieve a level of performance equivalent to rule 340-110-070 incinerators or high efficiency boilers as provided in paragraphs (1)(b)(D) and (1)(c)(D) of this rule, may submit a written request to the Department for an exemption from the incineration requirements of rule 340-110-070. The applicant must show that his method of destroying PCBs will not present an unreasonable risk of injury to health or the environment. On the basis of such information and any available information, the Department may, at its discretion, permit the use of the alternate if it finds that the alternate disposal methods provides PCB destruction equivalent to disposal in a rule 340-110-070 incinerator and will not present an unreasonable risk of injury to health or the environment. The permit shall be issued in accordance with Division 106 and may contain such conditions and provisions as the Department deems appropriate. The person to whom such waiver is issued must comply with all limitations contained in the permit.

(6) Testing procedures. (a) Owners or users of mineral oil dielectric fluid electrical equipment may use the following procedures to determine the concentration of PCBs in the dielectric fluid:

(A) Dielectric fluid removed from mineral oil dielectric fluid electrical equipment may be collected in a common container, provided that no other chemical substances or mixtures are added to the container. This common container option does not permit dilution of the collected oil. Mineral oil that is assumed or known to contain at least 50 ppm PCBs must not be mixed with mineral oil that is known or assumed to contain less than 50 ppm PCBs to reduce the concentration of PCBs in the common container. If dielectric fluid from untested, oil-filled circuit breakers, reclosers or cable is collected in a common container with dielectric fluid from other oil-filled electrical equipment, the entire contents of the container must be treated as PCBs at a concentration of at least 50 ppm, unless all of the fluid from the other oil-filled electrical equipment has been tested and shown to contain less than 50 ppm PCBs.

(B) For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common containers or the individual electrical equipment to determine the PCB concentration. Except, that if any PCBs at a concentration of 500 ppm or greater have been added to the container or equipment then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements of this Subdivision. For purposes of this paragraph, representative samples of mineral oil dielectric fluid are either samples taken in accordance with American Society of Testing and Materials method D-923-81 or samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container.

(b) Owners or users of waste oil may use the following procedures to determine the PCB concentration of waste oil:

(A) Waste oil from more than one source may be collected in a common container, provided that no other chemical substances or mixtures, such as non-waste oils, are added to the container.

(B) For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common container or individual containers to determine the PCB concentration, except that if any PCBs at a concentration of 500 ppm or greater have been added to the container then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements of this Subdivision. For purposes of this paragraph, representative samples of waste oil are either samples taken in accordance with American Society of Testing and Materials method D-923 or samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container.

(7) Waste oil. The use of waste oil that contains any detectable concentration of PCB as a sealant, coating or dust control agent is prohibited. Prohibited uses include, but are not limited to, road oiling, general dust control, use as a pesticide or herbicide carrier and use as a rust preventative on pipes.

Storage for disposal.

340-110-065 (1) Any PCB article or PCB container stored for disposal shall be removed from storage and disposed of as required by Subdivision D within one year from the date when it was first placed into storage.

(2) Except as provided in section (3) of this rule, owners or operators of any facilities used for the storage of PCBs and PCB items designated for disposal shall comply with the following requirements:

(a) The facilities shall meet the following criteria:

(A) Adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB items;

(B) An adequate floor which has continuous curbing with a minimum six inch high curb. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB article or PCB container stored therein or 25% of the total internal volume of all PCB articles or PCB containers stored therein, whichever is greater;

(C) No drain valves, floor drains, expansion joints, sewer lines or other openings that would permit liquids to flow from the curbed area;

(D) Floors and curbing constructed of continuous smooth and impervious materials, such as Portland cement concrete or steel, to prevent or minimize penetration of PCBs; and

(E) Not located at a site that is below the 100-year flood water elevation.

(3)(a) The following PCB items may be stored temporarily in an area that does not comply with the requirements of section (2) of this rule for up to thirty days from the date of their removal from service, provided that a notation is attached to the PCB item or a PCB container (containing the item) indicating the date the item was removed from service:

(A) Non-leaking PCB articles and PCB equipment;

(B) Leaking PCB articles and PCB equipment if placed in a non-leaking PCB container that contains sufficient sorbent materials to absorb any liquid PCBs remaining in the the PCB items;

(C) PCB containers containing non-liquid PCBs such as contaminated soil, rags and debris; and

(D) PCB containers containing liquid PCBs at a concentration between 50 and 500 ppm, provided a Spill Prevention, Control and Countermeasure Plan has been prepared for the temporary storage area in accordance with 40 CFR Part 112. In addition, each container must bear a notation that indicates that the liquids in the drum do not exceed 500 ppm PCB.

(b) Non-leaking and structurally undamaged PCB large high voltage capacitors and PCB-contaminated electrical equipment that have not been drained of free flowing dielectric fluid may be stored on pallets next to a storage facility that meets the requirements of section (2) of this rule. PCB-contaminated electrical equipment that has been drained of free flowing dielectric fluid is not subject to the storage provisions of rule 340-110-065. Storage under this subsection will be permitted only when the storage facility has immediately available unfilled storage space equal to 10% of the volume of capacitors and equipment stored outside the facility. The capacitors and equipment temporarily stored outside the facility shall be checked for leaks weekly.

(c) Any storage area subject to the requirements of section (2) or subsection (3)(a) of this rule shall be marked as required by rule 340-110-040(1)(j).

(d) No item of movable equipment that is used for handling PCBs and PCB items in the storage facilities and that comes in direct contact with

PCBs shall be removed from the storage facility area unless it has been decontaminated as specified in rule 340-110-079.

(e) All PCB articles and PCB containers in storage shall be checked for leaks at least once every 30 days. Any leaking PCB articles and PCB containers and their contents shall be transferred immediately to properly marked non-leaking containers. Any spilled or leaked materials shall be immediately cleaned up, using sorbents or other adequate means, and the PCB-contaminated materials and residues shall be disposed of in accordance with rule 340-110-060(1)(d).

(f) Except as provided in subsection (3)(g) of this rule, any container used for the storage of liquid PCBs shall comply with the Shipping Container Specification of the Department of Transportation (DOT), 49 CFR 178.80 (specification 5 container without removable head), 178.82 (Specification 5B container without removable head), 178.102 (Specification 6D overpack with Specification 2S (178.35) or 2SL (178.35a) polyethylene containers) or 178.116 (Specification 17E container). Any container used for the storage of non-liquid PCBs shall comply with the specifications of 49 CFR 178.80 (Specification 5 container), 178.82 (Specification 5B container) or 178.115 (Specification 17C container). As an alternate, container larger than those specified in DOT Specifications 5, 5B or 17C may be used for non-liquid PCBs if the containers are designed and constructed in a manner that will provide as much protection against leaking and exposure to the environment as the DOT Specification containers, and are of the same relative strength and durability as the DOT Specification containers.

(g) Storage containers for liquid PCBs can be larger than the containers specified in subsection (3)(f) of this rule provided that:

(A) The containers are designed, constructed and operated in compliance with Occupational Safety and Health Standards, 29 CFR 1910.106, Flammable and combustible liquids. Before using these containers for storing PCBs, the design of the containers must be reviewed to determine the effect on the structural safety of the containers that will result from placing liquids with the specific gravity of PCBs into the containers (see 29 CFR 1910.106(b)(1)(f)).

(B) The owners or operators of any facility using containers described in paragraph (3)(g)(A) of this rule shall prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan as described in 40 CFR Part 112. In complying with 40 CFR Part 112, the owner or operator shall read "oil(s)" as "PCB(s)" whenever it appears.

(h) PCB articles and PCB containers shall be dated on the article or container when they are placed in storage. The storage shall be managed so that the PCB articles and PCB containers can be located by the date they entered storage. Storage containers provided in subsection (3)(g) of this rule shall have a record that includes for each batch of PCBs the quantity of the batch and date the batch was added to the container. The record shall also include the date, quantity and disposition of any batch of PCBs removed from the container.

(i) Owners or operators of storage facilities shall establish and maintain records as provided in rule 340-110-080.

Incineration.

340-110-070 (1) Liquid PCBs. An incinerator used for incinerating PCBs shall be permitted by the Department pursuant to section (4) of this rule. The incinerator shall meet all of the requirements specified in

subsections (1)(a) through (i) of this rule, unless a waiver from these requirements is obtained pursuant to subsection (4)(e) of this rule. In addition, the incinerator shall meet any other requirements which may be prescribed pursuant to subsection (4)(d) of this rule.

(a) Combustion criteria shall be either of the following:

(A) Maintenance of the introduced liquids for a 2-second dwell time at 1200° C ($\pm 100^\circ$ C) and 3% excess oxygen in the stack gas; or

(B) Maintenance of the introduced liquids for a 1 1/2-second dwell time at 1600° C ($\pm 100^\circ$ C) and 2% excess oxygen in the stack gas.

(b) Combustion efficiency shall be at least 99.9% computed as follows:

C_{CO_2} = concentration of carbon dioxide

C_{CO} = concentration of carbon monoxide

(c) The rate and quantity of PCBs which are fed to the combustion system shall be measured and recorded at regular intervals of no longer than 15 minutes.

(d) The temperatures of the incineration process shall be continuously measured and recorded. The combustion temperature of the incineration process shall be based on either direct (pyrometer) or indirect (wall thermocouple-pyrometer correlation) temperature readings.

(e) The flow of PCBs to the incinerator shall stop automatically whenever the combustion temperature drops below the temperatures specified in subsection (1)(a) of this rule.

(f) Monitoring of stack emission products shall be conducted:

(A) When an incinerator is first used for the disposal of PCBs under the provisions of this regulation;

(B) When an incinerator is first used for the disposal of PCBs after the incinerator has been modified in a manner which may affect the characteristics of the stack emission products; and

(C) At a minimum such monitoring shall be conducted for the following parameters: (i) O₂; (ii) CO; (iii) CO₂; (iv) Oxides of nitrogen (NO_x); (v) Hydrochloric Acid (HCl); (vi) Total chlorinated organic content (TCO); (vii) PCBs; and (viii) Total particulate matter.

(g) At a minimum monitoring and recording of combustion products and incineration operations shall be conducted for the following parameters whenever the incinerator is incinerating PCBs: (A) O₂; (B) CO; (C) CO₂. The monitoring for O₂ and CO shall be continuous. The monitoring for CO₂ shall be periodic, at a frequency specified by the Department.

(h) The flow of PCBs to the incinerator shall stop automatically when any one or more of the following conditions occur unless a contingency plan is submitted by the incinerator owner or operator and permitted by the Department and the contingency plan indicates what alternative measures the incinerator owner or operator would take if any of the following conditions occur:

(A) Failure of monitoring operations specified in subsection (1)(g) of this rule;

(B) Failure of the PCB feed rate and quantity measuring and recording equipment specified in subsection (1)(c) of this rule; or

(C) Excess oxygen falls below the percentage specified in subsection (1)(a) of this rule.

(i) Water scrubbers shall be used for HCl control during PCB incineration and shall meet any performance requirements specified by the Department. Scrubber effluent shall be monitored and shall comply with

applicable effluent or pretreatment standards, and any other state and federal laws and regulations. An alternate method of HCl control may be used if the alternate method has been approved by the Department. (The HCl neutralizing capability of cement kilns is considered to be an alternate method.)

(2) Non-liquid PCBs. An incinerator used for incinerating non-liquid PCBs, PCB articles, PCB equipment or PCB containers shall be permitted by the Department pursuant to section (4) of this rule. The incinerator shall meet all of the requirements specified in subsections (2)(a) and (b) of this rule unless a waiver from these requirements is obtained pursuant to subsection (4)(e) of this rule. In addition, the incinerator shall meet any other requirements that may be prescribed pursuant to subsection (4)(d) of this rule.

(a) The mass air emissions from the incinerator shall be no greater than 0.001 g PCB/kg of the PCB introduced into the incinerator.

(b) The incinerator shall comply with the provisions of subsections (1)(b), (c), (d), (f), (g), (h)(A) and (B), and (i) of this rule.

(3) Maintenance of data and records. All data and records required by this rule shall be maintained in accordance with rule 340-110-080.

(4) Incinerators permits. Prior to the incineration of PCBs and PCB items, the owner or operator of an incinerator shall obtain a permit from the Department. The permit shall be obtained in the following manner:

(a) Initial report. The owner or operator shall submit to the Department an initial report which contains:

(A) The location of the incinerator;

(B) A detailed description of the incinerator including general site plans and design drawings of the incinerator;

(C) Engineering reports or other information on the anticipated performance of the incinerator;

(D) Sampling and monitoring equipment and facilities available;

(E) Waste volumes expected to be incinerated;

(F) Any local, state or federal permits or approvals; and

(G) Schedules and plans for complying with the permit requirements.

(b) Trial burn. (A) Following receipt of the report described in subsection (4)(a) of this rule, the Department shall determine if a trial burn is required and notify the person who submitted the report whether a trial burn of PCBs and PCB items must be conducted. The Department may require the submission of any other information that the Department finds to be reasonably necessary to determine the need for a trial burn. Such other information shall be restricted to the types of information required in paragraphs (4)(a)(A) through (G) of this rule.

(B) If the Department determines that a trial burn must be held, the person who submitted the report described in subsection (4)(a) of this rule shall submit to the Department a detailed plan for conducting and monitoring the trial burn. At a minimum, the plan must include:

(i) Date trial burn is to be conducted;

(ii) Quantity and type of PCBs and PCB items to be incinerated;

(iii) Parameters to be monitored and location of sampling points;

(iv) Sampling frequency and methods and schedules for sample analyses;

and

(v) Name, address and qualifications of persons who will review analytical results and other pertinent data, and who will perform a technical evaluation of the effectiveness of the trial burn.

(C) Following receipt of the plan described in paragraph (4)(b)(B) of this rule, the Department may approve the plan, require additions or

modifications to the plan, or disapprove the plan. If the plan is disapproved, the Department will notify the person who submitted the plan of such disapproval, together with the reasons why it is disapproved. That person may thereafter submit a new plan in accordance with paragraph (4)(b)(B) of this rule. If the plan is approved (with any additions or modifications which the Department may prescribe), the Department will notify the person who submitted the plan of the approval. Thereafter, the trial burn shall take place at a date and time to be agreed upon between the Department and the persons who submitted the plan.

(c) Other information. In addition to the information contained in the report and plan described in subsections (4)(a) and (b) of this rule, the Department may require the owner or operator to submit any other information that the Department finds to be reasonably necessary to determine whether an incinerator permit shall be approved.

(d) Contents of permit. (A) Except as provided in subsection (4)(e) of this rule, the Department need not permit an incinerator for the disposal of PCB and PCB items unless it finds that the incinerator meets all of the requirements of sections (1) and/or (2) of this rule.

(B) In addition to the requirements of sections (1) and/or (2) of this rule, the Department may include in a permit any other requirements that the Department finds are necessary to ensure that operation of the incinerator does not present an unreasonable risk of injury to health or the environment from PCBs. Such requirements may include a fixed period of time for which the permit is valid.

(e) Waivers. An owner or operator of the incinerator may submit evidence to the Department that operation of the incinerator will not present an unreasonable risk of injury to health or the environment from PCBs, when one or more of the requirements of sections (1) and/or (2) of this rule are not met. On the basis of such evidence and any other available information, the Department may in its discretion find that any requirement of sections (1) and (2) is not necessary to protect against such a risk, and may waive the requirements in any permit for that incinerator. Any finding and waiver under this subsection must be stated in writing and included as part of the permit.

(f) Persons permitted. A permit will designate the persons who own and who are authorized to operate the incinerator, and will apply only to such persons, except as provided in subsection (4)(h) of this rule.

(g) Transfer of property. Any person who owns or operates a permitted PCB incinerator must notify the Department at least 30 days before transferring ownership in the incinerator or the property it stands upon, or transferring the right to operate the incinerator. The transferor must also submit to the Department, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the transferee will abide by the transferor's incinerator permit; however, the Department will require the transferee to apply for a new PCB incinerator permit. The transferee must abide by the transferor's approval until the Department issues a new permit to the transferee.

PCB landfills.

340-110-075 (1) General. A landfill used for the disposal of PCBs and PCB items shall be permitted by the Department pursuant to section (3) of this rule. The landfill shall meet all of the requirements specified in section (2) of this rule, unless a waiver from these requirements is obtained pursuant to subsection (3)(d) of this rule. In addition, the

landfill shall meet any other requirements that may be prescribed pursuant to subsection (3)(c) of this rule.

(2) Technical requirements. Requirements for landfills used for the disposal of PCBs and PCB items are as follows:

(a) Soils. The landfill site shall be located in thick, relatively impermeable formations such as large-area clay pans. Where this is not possible, the soil shall have a high clay and silt content with the following parameters:

(A) In-place soil thickness, 4 feet or compacted soil liner thickness, 3 feet;

(B) Permeability (cm/sec), equal to or less than 1×10^{-7} ;

(C) Percent soil passing No. 200 Sieve, >30;

(D) Liquid Limit, >30; and

(E) Plasticity Index, >15.

(b) Synthetic membrane liners. Synthetic membrane lines shall be used when, in the judgment of the Department, the hydrologic or geologic conditions at the landfill require such a liner in order to provide at least a permeability equivalent to the soils in subsection (2)(a) of this rule. Whenever a synthetic liner is used at a landfill site, special precautions shall be taken to ensure that its integrity is maintained and that it is chemically compatible with PCBs. Adequate soil underlining and soil cover shall be provided to prevent excessive stress on the liner and to prevent rupture of the liner. The liner must have a minimum thickness of 30 mils.

(c) Hydrologic conditions. The bottom of the landfill shall be above the historical high groundwater table as provided below. Floodplains, shorelands and groundwater recharge areas shall be avoided. There shall be no hydraulic connection between the site and standing or flowing surface water. The site shall have monitoring wells and leachate collection. The bottom of the landfill liner system or natural in-place soil barrier shall be at least fifty feet from the historical high water table.

(d) Flood protection. (A) If the landfill site is below the 100-year floodwater elevation, the operator shall provide surface water diversion dikes around the perimeter of the landfill site with a minimum height equal to two feet above the 100-year floodwater elevation.

(B) If the landfill site is above the 100-year floodwater elevation, the operators shall provide diversion structures capable of diverting all of the surface water runoff from a 24-hour, 25-year storm.

(e) Topography. The landfill site shall be located in an area of low to moderate relief to minimize erosion and to help prevent landslides or slumping.

(f) Monitoring systems. (A) Water sampling. (i) For sites receiving PCBs, the groundwater and surface water from the disposal site area shall be sampled prior to commencing operations under the permit required by section (3) of this rule for use as baseline data.

(ii) Any surface watercourse designated by the Department using the authority provided in paragraph (3)(c)(B) of this rule shall be sampled at least monthly when the landfill is being used for disposal operations.

(iii) Any surface watercourse designated by the Department using the authority provided in paragraph (3)(c)(B) of this rule shall be sampled for a time period specified by the Department on a frequency of no less than once every six months after final closure of the disposal area.

(B) Groundwater monitoring wells. (i) If underlying earth materials are homogenous, impermeable and uniformly sloping in one direction, only three sampling points shall be necessary. These three points shall be

equally spaced on a line through the center of the disposal area and extending from the area of highest water table elevation to the area of the lowest water table elevation on the property.

(ii) All monitoring wells shall be cased and the annular space between the monitor zone (zone of saturation) and the surface shall be completely backfilled with Portland cement or an equivalent material and plugged with Portland cement to effectively prevent percolation of surface water into the well bore. The well opening at the surface shall have a removable cap to provide access and to prevent entrance of rainfall or stormwater runoff. The well shall be pumped to remove the volume of liquid initially contained in the well before obtaining a sample for analysis. The discharge shall be treated to meet applicable state or federal discharge standards or recycled to the chemical waste landfill.

(C) Water analysis. As a minimum, all samples shall be analyzed for the following parameters, and all data and records of the sampling and analysis shall be maintained as required in rule 340-110-080(4)(a). Sampling methods and analytical procedures for these parameters shall comply with those specified in "Test Methods for Evaluating Solid Waste," 2nd Ed., EPA SW-846, 7/82 (see rule 340-100-011).

(i) PCBs.

(ii) pH.

(iii) Specific conductance.

(iv) Chlorinated organics.

(g) Leachate collection. A leachate collection monitoring system shall be installed above the landfill liner. Leachate collection systems shall be monitored monthly for quantity and physiochemical characteristics of leachate produced. The leachate should be either treated to acceptable limits for discharge in accordance with a state permit or disposed of by another state-approved method. Water analysis shall be conducted as provided in paragraph (2)(f)(C) of this rule. Acceptable leachate monitoring/collection systems shall be any of the following design, unless a waiver is obtained pursuant to subsection (3)(d) of this rule.

(A) Simple leachate collection. This system consists of a gravity flow drainfield installed above the waste disposal facility liner. This design is recommended for use when semi-solid or leachable solid wastes are placed in a lined pit excavated into a relatively thick, unsaturated, homogenous layer of low permeability soil.

(B) Compound leachate collection. This system consists of a gravity flow drainfield installed above the waste disposal facility liner and above a secondary installed liner. This design is recommended for use when semi-liquid or leachable solid wastes are placed in a lined pit excavated into relatively permeable soil.

(C) Suction lysimeters. This system consists of a network of porous ceramic cups connected by hoses or tubing to a vacuum pump. The porous ceramic cups or suction lysimeters are installed along the sides and under the bottom of the waste disposal facility liner. This type of system works best when installed in a relatively permeable unsaturated soil immediately adjacent to the bottom and/or sides of the disposal facility.

(h) PCB landfill operations. (A) PCBs and PCB items shall be placed in a landfill in a manner that will prevent damage to containers or articles. Other wastes placed in the landfill that are not chemically compatible with PCBs and PCB items including organic solvents shall be segregated from the PCBs throughout the waste handling and disposal process.

(B) An operation plan shall be developed and submitted to the

Department for approval as required in section (3) of this rule. This plan shall include detailed explanations of the procedures to be used for recordkeeping, surface water handling procedures, excavation and backfilling, waste segregation burial coordinates, vehicle and equipment movement, use of roadways, leachate collection systems, sampling and monitoring procedures, monitoring wells, environmental emergency contingency plans and security measures to protect against vandalism and unauthorized waste placements. Division 104 is a useful reference in preparation of this plan. If the facility is to be used to dispose of liquid waste containing between 50 ppm and 500 ppm PCB, the operations plan must include procedures to determine that liquid PCBs to be disposed of at the landfill do not exceed 500 ppm PCB and measures to prevent the migration of PCBs from the landfill. Bulk liquids not exceeding 500 ppm PCBs may be disposed of provided such waste is pretreated and/or stabilized (e.g., chemically fixed, evaporated, mixed with dry inert absorbent) to reduce its liquid content or increase its solid content so that a non-flowing consistency is achieved to eliminate the presence of free liquids prior to final disposal in a landfill. Containers of liquid PCBs with a concentration between 50 and 500 ppm PCB may be disposed of if each container is surrounded by an amount of inert sorbent material capable of absorbing all of the liquid contents of the container.

(C) Ignitable waste shall not be disposed of in a PCB landfill. Liquid ignitable wastes are wastes that have a flash point less than 60° C (140° F) as determined by the following method or an equivalent method: Flash point of liquids shall be determined by a Pensky-Martens Closed Cup Tester, using the protocol specified in ASTM Standard D-93-79 or D-93-80, or the Setaflash Closed Tester using the protocol specified in ASTM Standard D-3278-78 (see rule 340-100-011).

(D) Records shall be maintained for all PCB disposal operations and shall include information on the PCB concentration in liquid wastes and the three dimensional burial coordinates for PCBs and PCB items. Additional records shall be developed and maintained as required in rule 340-110-080.

(i) Supporting facilities. (A) A six foot woven mesh fence, wall or similar device shall be placed around the site to prevent unauthorized persons and animals from entering.

(B) Roads shall be maintained to and within the site which are adequate to support the operation and maintenance of the site without causing safety or nuisance problems or hazardous conditions.

(C) The site shall be operated and maintained in a manner to prevent safety problems or hazardous conditions resulting from spilled liquids and windblown materials.

(3) Permitting of PCB landfills. Prior to the disposal of any PCBs and PCB Items in a PCB landfill, the owner or operator of the landfill shall obtain a permit from the Department. The permit shall be obtained in the following manner:

(a) Initial report. The owner or operator shall submit to the Department an initial report which contains:

(A) The location of the landfill;

(B) A detailed description of the landfill including general site plans and design drawings;

(C) An engineering report describing the manner in which the landfill complies with the requirements for PCB landfills specified in section (2) of this rule;

(D) Sampling and monitoring equipment and facilities available;

(E) Expected waste volumes of PCBs;

(F) General description of waste materials other than PCBs that are expected to be disposed of in the landfill;

(G) Landfill operations plan as required in section (2) of this rule;

(H) Any local, state or federal permits or approvals; and

(I) Any schedules or plans for complying with the permit requirements.

(b) Other information. In addition to the information contained in the report described in subsection (3)(a) of this rule, the Department may require the owner or operator to submit any other information that it finds to be reasonably necessary to determine whether a PCB landfill permit should be approved. Such other information shall be restricted to the types of information required in paragraphs (3)(a)(A) through (I) of this rule.

(c) Contents of permit. (A) Except as provided in subsection (3)(d) of this rule, the Department need not permit a PCB landfill for the disposal of PCB and PCB items unless he finds that the PCB landfill meets all of the requirements of section (2) of this rule.

(B) In addition to the requirements of section (2) of this rule, the Department may include in a permit any other requirements that it finds are necessary to ensure that operation of the PCB landfill does not present an unreasonable risk of injury to health or the environment from PCBs. Such provisions may include a fixed period of time for which the permit is valid. The permit may also include a stipulation that the operator of the PCB landfill report to the Department any instance when PCBs are detectable during monitoring activities conducted pursuant to subsection (2)(f) of this rule.

(d) Waivers. An owner or operator of a PCB landfill may submit evidence to the Department that operation of the landfill will not present an unreasonable risk of injury to health or the environment from PCBs when one or more of the requirements of section (2) of this rule are not met. On the basis of such evidence and any other available information, the Department may, at its discretion, find that any requirement of section (2) of this rule is not necessary to protect against such a risk and may waive the requirements in any permit for that landfill. Any finding and waiver under this subsection must be stated in writing and included as part of the permit.

(e) Persons permitted. A permit will designate the persons who own and who are authorized to operate the PCB landfill, and will apply only to such persons, except as provided in subsection (3)(g) of this rule.

(f) Transfer of property. Any person who owns or operates a permitted PCB landfill must notify the Department at least 30 days before transferring ownership in the property or transferring the right to conduct the PCB landfill operation. The transferor must also submit to the Department, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the transferee will abide by the transferor's PCB landfill permit; however, the Department will require the transferee to apply for a new PCB landfill permit. In the latter case, the transferee must abide by the transferor's permit until the Department issues a new permit to the transferee.

Permits.

340-110-077 (1) The procedures of Division 106 will be followed in issuing permits required by this Division.

(2) The treatment facility fee schedule set forth in Subdivision G of Division 105 shall apply to permits required by this Division.

(3) Persons currently holding valid management facility permits issued under OAR Chapter 340, Divisions 62 and 63, when those Divisions were in effect, shall be deemed to have a PCB permit until such time as the permit expires, is modified, revoked and reissued, or terminated pursuant to Division 106.

Decontamination.

340-110-079 (1) Any PCE container to be decontaminated shall be decontaminated by flushing the internal surfaces of the container three times with a solvent containing less than 50 ppm PCB. The solubility of PCBs in the solvent must be 5% or more by weight. Each rinse shall use a volume of the normal diluent equal to approximately 10% of the PCE container capacity. The solvent may be reused for decontamination until it contains 50 ppm PCB. The solvent shall then be disposed of as a PCB in accordance with rule 340-110-060(1). Non-liquid PCBs resulting from the decontamination procedures shall be disposed of in accordance with the provisions of rule 340-110-060(1)(d).

(2) Movable equipment used in storage areas shall be decontaminated by swabbing surfaces that have contacted PCBs with a solvent meeting the criteria of section (1) of this rule.

(Comment: Precautionary measures should be taken to ensure that the solvent meets safety and health standards as required by applicable federal and state regulations.)

Subdivision J: Records and Reports

Records and monitoring.

340-110-080 (1) PCBs and PCB items projected for disposal. Every owner or operator of a facility storing at one time at least 99.4 pounds of PCBs contained in PCB container(s) or one or more PCB transformers, or 50 or more PCB large high or low voltage capacitors shall develop and maintain records on the disposition of PCBs and PCB items. These records shall form the basis of an annual document prepared for each facility by July 1 covering the previous calendar year. Owners or operators with one or more facilities that store PCBs and PCB items in the quantities described above may maintain the records and documents at one of the facilities that is normally occupied for 8 hours a day, provided the identity of this facility is available at each facility storing PCBs and PCB items. The records and documents shall be maintained for at least five years after the facility ceases storing PCBs and PCB items in the prescribed quantities. The following information for each facility shall be included in the annual document:

(a) The dates when PCBs and PCB items are removed from service, are placed into storage for disposal, and are placed into transport for disposal. The quantities of the PCBs and PCB items shall be indicated using the following breakdown:

(A) Total weight in pounds of any PCBs and PCB items in PCB containers including the identification of container contents such as liquids and capacitors;

(B) Total number of PCB transformers and total weight in pounds of any PCBs contained in the transformers; and

(C) Total number of PCB large high or low voltage capacitors.

(b) For PCBs and PCB items removed from service, the location of the initial disposal or storage facility and the name of the owner or operator of the facility.

(Comment: This section is primarily aimed at users of PCBs and PCB items.)

(2) Disposal and storage facilities. Each owner or operator of a facility (including high efficiency boiler operations) used for the storage or disposal of PCBs and PCB items shall, by each July 1, prepare and maintain a document that includes the information required in subsections (2)(a) through (d) of this rule for PCBs and PCB items that were handled at the facility during the previous calendar year. The document shall be retained at each facility for at least 5 years after the facility is no longer used for the storage or disposal of PCBs and PCB items except that in the case of PCB landfills, the document shall be maintained at least 20 years after the PCB landfill is no longer used for the disposal of PCBs and PCB items. The documents shall be available at the facility for inspection by authorized representatives of the Department. If the facility ceases to be used for PCB storage or disposal, the owner or operator of such facility shall notify the Department within 60 days that the facility has ceased storage or disposal operations. The notice shall specify where the documents that are required to be maintained by this section are located. The following information shall be included in each document:

(a) The date when any PCBs and PCB items were received by the facility during the previous calendar year for storage or disposal, and identification of the facility and the owner or operator of the facility from whom the PCBs were received;

(b) The date when any PCBs and PCB items were disposed of at the disposal facility or transferred to another disposal or storage facility, including the identification of the specific types of PCBs and PCB items that were stored or disposed of;

(c) A summary of the total weight in pounds of PCBs and PCB articles in containers and the total weight of PCBs contained in PCB transformers, that have been handled at the facility during the previous calendar year. This summary shall provide totals of the above PCBs and PCB items which have been:

(A) Received during the year;

(B) Transferred to other facilities during the year; and

(C) Retained at the facility at the end of the year. In addition, the contents of PCB containers shall be identified. When PCB containers and PCBs contained in a transformer are transferred to other storage or disposal facilities, the identification of the facility to which such PCBs and PCB items were transferred shall be included in the document.

(d) Total number of any PCB articles or PCB equipment not in PCB containers, received during the calendar year, or remaining on the facility site at the end of the calendar year. The identification of the specific types of PCB articles and PCB equipment received, transferred or remaining on the facility site shall be indicated. When PCB articles and PCB equipment are transferred to other storage or disposal facilities, the identification of the facility to which the PCB articles and PCB equipment were transferred must be included.

(Comment: Any requirements for weights in pounds of PCBs may be calculated values if the internal volume of containers and transformers is known and included in the reports, together with any assumptions on the density of the PCBs contained in the containers or transformers.)

(3) Incineration facilities. Each owner or operator of a PCB incinerator facility shall collect and maintain for a period of 5 years from the date of collection the following information, in addition to the information required in section (2) of this rule:

(a) When PCBs are being incinerated, the following continuous and short-interval data:

(A) Rate and quantity of PCBs fed to the combustion system as required in rule 340-110-070(1)(c);

(B) Temperature of the combustion process as required in rule 340-110-070(1)(d); and

(C) Stack emission products to include O₂, CO and CO₂ as required in rule 340-110-070(1)(g).

(b) When PCBs are being incinerated, data and records on the monitoring of stack emission as required in rule 340-110-070(1)(f).

(c) Total weight in pounds of any solid residues generated by the incineration of PCBs and PCB items during the calendar year, the total weight in pounds of any solid residues disposed of by the facility in PCB landfills, and the total weight in pounds of any solid residues remaining on the facility site.

(d) When PCBs and PCB items are being incinerated, additional periodic data shall be collected and maintained as specified by the Department pursuant to rule 340-110-070(4)(d).

(e) Upon any suspension of the operation of any incinerator pursuant to rule 340-110-070(1)(h), the owner or operator of such an incinerator shall prepare a document. The document shall, at a minimum, include the date and time of the suspension and an explanation of the circumstances causing the suspension of operation. The document shall be sent to the

Department within 30 days of any such suspension.

(4) PCB landfill facilities. Each owner or operator of a PCB landfill facility shall collect and maintain until at least 20 years after the PCB landfill is no longer used for the disposal of PCBs the following information in addition to the information required in section (2) of this rule:

(a) Any water analysis obtained in compliance with rule 340-110-075(2)(f)(C); and

(b) Any operations records including burial coordinates of wastes obtained in compliance with rule 340-110-075(2)(h)(B).

(5) High efficiency boiler facilities. Each owner or operator of a high efficiency boiler used for the disposal of liquids between 50 and 500 ppm PCB shall collect and maintain for a period of 5 years the following information, in addition to the information required in section (2) of this rule:

(a) For each month PCBs are burned in the boiler the carbon monoxide and excess oxygen data required in rule 340-110-060(1)(b)(C)(i)(VIII) and (1)(c)(C)(i)(VIII).

(b) The quantity of PCBs burned each month as required in rule 340-110-060(1)(b)(C)(i)(VII) and (1)(c)(C)(i)(VII).

(c) For each month PCBs (other than mineral oil dielectric fluid) are burned, chemical analysis data of the waste as required in rule 340-110-060(1)(c)(C)(ii)(VI).

(6) Retention of special records by storage and disposal facilities. In addition to the information required to be maintained under sections (2) to (5) of this rule, each owner or operator of a PCB storage or disposal facility (including high efficiency boiler operations) shall collect and maintain for the time period specified in section (2) of this rule the following data:

(a) All documents, correspondence and data that have been provided to the owner or operator of the facility by any local, state or federal government agency and that pertain to the storage or disposal of PCBs and PCB items at the facility.

(b) All documents, correspondence and data that have been provided by the owner or operator of the facility to any local, state or federal government agency and that pertain to the storage or disposal of PCBs and PCB items at the facility.

(c) Any applications and related correspondence sent by the owner or operator of the facility to any local, state or federal authorities in regard to wastewater discharge permits, solid waste permits, building permits or other permits or authorizations such as those required by rules 340-110-070(4) and -075(3).

ENERGY CONSERVATION

469.930

(d) Set a reasonable time schedule for effective implementation of the elements set forth in this section.

(2) The commercial energy audit program submitted under subsection (1) of this section shall specify whether the publicly owned utility proposes to charge the customer a fee for the energy audit and, if so, the fee amount. [1981 c.708 §§15, 16]

469.890 Publicly owned utility to adopt commercial energy conservation program; fee. (1) Within 365 days after November 1, 1981, the director shall adopt rules governing energy conservation programs prescribed by ORS 469.895, 469.900 (3) and this section and may provide for coordination among electric utilities and gas utilities that serve the same commercial building. Within 180 days of the adoption of rules by the director, each covered publicly owned utility shall present for the director's approval a commercial energy conservation services program which shall, to the director's satisfaction:

(a) Make information about energy conservation available to all commercial building customers of the covered publicly owned utility, upon request;

(b) Regularly notify all customers in commercial buildings of the availability of the services described in this section; and

(c) Provide to any commercial building customer of the covered publicly owned utility, upon request, an onsite energy audit of the customer's commercial building, including, but not limited to, an estimate of the cost of energy conservation measures.

(2) The programs submitted and approved under this section shall include a reasonable time schedule for effective implementation of the elements set forth in subsection (1) of this section in the service areas of the covered publicly owned utility.

(3) The commercial energy conservation services program submitted under subsections (1) and (2) of this section shall specify whether the covered publicly owned utility proposes to charge the customer a fee for the energy audit and, if so, the fee amount. [1981 c.708 §§18, 19]

469.895 Application of ORS 469.890 to 469.900 to publicly owned utility. (1) ORS 469.890, 469.900 (3) and this section apply in any calendar year to a publicly owned utility only if during the second preceding calendar year sales of electric energy by the publicly owned utility for purposes other than resale exceeded 750 million kilowatt-hours. For the purpose of ORS 469.890,

469.900 (3) and this section, a publicly owned utility with sales for nonresale purposes in excess of 750 million kilowatt-hours during the second preceding calendar year shall be known as a "covered publicly owned utility."

(2) ORS 469.890, 469.900 (3) and this section shall not apply to a covered publicly owned utility if the director determines that its existing commercial energy conservation services program meets or exceeds the requirements of those sections.

(3) Before the beginning of each calendar year, the director shall publish a list identifying each covered publicly owned utility to which ORS 469.890, 469.900 (3) and this section shall apply during that calendar year.

(4) Any covered publicly owned utility is exempt from the requirements of ORS 469.880 and 469.885. [1981 c.708 §17]

469.900 Duty of commissioner to avoid conflict with federal requirements. (1) The commissioner shall insure that each electric utility's commercial energy conservation services program does not conflict with federal statutes and regulations applicable to electric utilities and energy conservation in commercial buildings.

(2) The commissioner shall insure that each gas utility's commercial energy conservation services program does not conflict with federal statutes and regulations applicable to gas utilities and energy conservation in commercial buildings.

(3) The director shall insure that each covered publicly owned utility's commercial energy conservation services program does not conflict with federal statutes and regulations applicable to covered publicly owned utilities and energy conservation in commercial buildings. [1981 c.708 §§5, 10, 20]

Note: 469.900 (1) and (2) were enacted into law by the Legislative Assembly but were not added to or made a part of ORS chapter 469 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

NORTHWEST INTERSTATE COMPACT ON LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT

469.930 Northwest Interstate Compact on Low-Level Radioactive Waste Management. The Northwest Interstate Compact on Low-Level Radioactive Waste Management is enacted into law by the State of Oregon and entered into with all other jurisdictions lawfully joining therein in a form as provided for as follows:

ARTICLE I Policy and Purpose

The party states recognize that low-level radioactive wastes are generated by essential activities and services that benefit the citizens of the states. It is further recognized that the protection of the health and safety of the citizens of the party states and the most economical management of low-level radioactive wastes can be accomplished through cooperation of the states in minimizing the amount of handling and transportation required to dispose of such wastes and through the cooperation of the states in providing facilities that serve the region. It is the policy of the party states to undertake the necessary cooperation to protect the health and safety of the citizens of the party states and to provide for the most economical management of low-level radioactive wastes on a continuing basis. It is the purpose of this compact to provide the means for such a cooperative effort among the party states so that the protection of the citizens of the states and the maintenance of the viability of the states' economies will be enhanced while sharing the responsibilities of radioactive low-level waste management.

ARTICLE II Definitions

As used in this compact:

(1) "Facility" means any site, location, structure or property used or to be used for the storage, treatment or disposal of low-level waste, excluding federal waste facilities.

(2) "Low-level waste" means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities which exceed applicable federal or state standards for unrestricted release. Low-level waste does not include waste containing more than 10 nanocuries of transuranic contaminants per gram of material, nor spent reactor fuel, nor material classified as either high-level waste or waste which is unsuited for disposal by near-surface burial under any applicable federal regulations.

(3) "Generator" means any person, partnership, association, corporation or any other entity whatsoever which, as a part of its activities, produces low-level radioactive waste.

(4) "Host state" means a state in which a facility is located.

ARTICLE III Regulatory Practices

Each party state hereby agrees to adopt practices which will require low-level waste shipments

originating within its borders and destined for a facility within another party state to conform to the applicable packaging and transportation requirements and regulations of the host state. Such practices shall include:

(1) Maintaining an inventory of all generators within the state that have shipped or expect to ship low-level waste to facilities in another party state.

(2) Periodic unannounced inspection of the premises of such generators and the waste management activities thereon.

(3) Authorization of the containers in which such waste may be shipped and a requirement that generators use only that type of container authorized by the state.

(4) Assurance that inspections of the carriers which transport such waste are conducted by proper authorities and appropriate enforcement action is taken for violations.

(5) After receiving notification from a host state that a generator within the party state is in violation of applicable packaging or transportation standards, the party state will take appropriate action to assure that such violations do not recur. Such action may include inspection of every individual low-level waste shipment by that generator.

(6) Each party state may impose fees upon generators and shippers to recover the cost of the inspections and other practices under this Article. Nothing in this Article shall be construed to limit any party state's authority to impose additional or more stringent standards on generators or carriers than those required under this Article.

ARTICLE IV Regional Facilities

(1) Facilities located in any party state, other than facilities established or maintained by individual low-level waste generators for the management of their own low-level waste, shall accept low-level waste generated in any party state if such waste has been packaged and transported according to applicable laws and regulations.

(2) No facility located in any party state may accept low-level waste generated outside of the region comprised of the party states, except as provided in Article V.

(3) Until such time as paragraph (2) of this Article takes effect as provided in Article VI, facilities located in any party state may accept low-level waste generated outside of any of the

party states only if such waste is accompanied by a certificate of compliance issued by an official of the state in which such waste shipment originated. Such certificate shall be in such form as may be required by the host state and shall contain at least the following:

- (a) The generator's name and address;
- (b) A description of the contents of the low-level waste container;

(c) A statement that the low-level waste being shipped has been inspected by the official who issued the certificate or by an agent of the official or by a representative of the United States Nuclear Regulatory Commission, and found to have been packaged in compliance with applicable federal regulations and such additional requirements as may be imposed by the host state; and

(d) A binding agreement by the state of origin to reimburse any party state for any liability or expense incurred as a result of an accidental release of such waste, during shipment or after such waste reaches the facility.

(4) Each party state shall cooperate with the other party states in determining the appropriate site of any facility that might be required within the region comprised of the party states, in order to maximize public health and safety while minimizing the use of any one party state as the host of such facilities on a permanent basis. Each party state further agrees that decisions regarding low-level waste management facilities in the region will be reached through a good faith process which takes into account the burdens borne by each of the party states as well as the benefits each has received.

(5) The party states recognize that the issue of hazardous chemical waste management is similar in many respects to that of low-level waste management. Therefore, in consideration of the State of Washington allowing access to its low-level waste disposal facility by generators in other party states, party states such as Oregon and Idaho which host hazardous chemical waste disposal facilities will allow access to such facilities by generators within other party states. Nothing in this compact shall be construed to prevent any party state from limiting the nature and type of hazardous chemical or low-level wastes to be accepted at facilities within its borders or from ordering the closure of such facilities, so long as such action by a host state is applied equally to all generators within the region comprised of the party states.

(6) Any host state may establish a schedule of fees and requirements related to its facility to

assure that closure, perpetual care, and maintenance and contingency requirements are met, including adequate bonding.

ARTICLE V

Northwest Low-Level Waste Compact Committee

The governor of each party state shall designate one official of that state as the person responsible for administration of this compact. The officials so designated shall together comprise the Northwest low-level waste compact committee. The committee shall meet as required to consider matters arising under this compact. The parties shall inform the committee of existing regulations concerning low-level waste management in their states and shall afford all parties a reasonable opportunity to review and comment upon any proposed modifications in such regulations. Notwithstanding any provision of Article IV to the contrary, the committee may enter into arrangements with states, provinces, individual generators or regional compact entities outside the region comprised of the party states for access to facilities on such terms and conditions as the committee may deem appropriate. However, it shall require a two-thirds vote of all such members, including the affirmative vote of the member of any party state in which a facility affected by such arrangement is located, for the committee to enter into such arrangement.

ARTICLE VI

Eligible Parties and Effective Date

(1) Each of the following states is eligible to become a party to this compact: Alaska, Hawaii, Idaho, Montana, Oregon, Utah, Washington and Wyoming. As to any eligible party, this compact shall become effective upon enactment into law by that party, but it shall not become initially effective until enacted into law by two states. Any party state may withdraw from this compact by enacting a statute repealing its approval.

(2) After the compact has initially taken effect pursuant to paragraph (1) of this Article any eligible party state may become a party to this compact by the execution of an executive order by the governor of the state. Any state which becomes a party in this manner shall cease to be a party upon the final adjournment of the next general or regular session of its legislature or July 1, 1983, whichever occurs first, unless the compact has by then been enacted as a statute by that state.

(3) Paragraph (2) of Article IV of this compact shall take effect on July 1, 1983, if consent is given by Congress. As provided in Public Law

96-573, Congress may withdraw its consent to the compact after every five-year period.

ARTICLE VII
Severability

If any provision of this compact, or its application to any person or circumstance, is held to be invalid, all other provisions of this compact, and the application of all of its provisions to all other persons and circumstances, shall remain valid; and to this end the provisions of this compact are severable.

[1981 c.479 §1]

469.935 State appointee subject to Senate confirmation. The Oregon appointee to the Northwest Low-Level Waste Compact Committee shall be subject to Senate confirmation pursuant to section 4, Article III of the Oregon Constitution. [1981 c.497 §3]

Note: 469.935 was enacted into law by the Legislative Assembly but was not added to or made a part of ORS chapter 469 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

469.950 Authority to enter into interstate cooperative agreements to control power costs and rates. The State of Oregon shall pursue and may enter into an interstate cooperative agreement with the states of Washington, Idaho and Montana for the purpose of making collective efforts to control Bonneville Power Administration wholesale power costs and rates by studying and developing a region-wide response to:

(1) Federal attempts to increase arbitrarily the interest rates on federal funds previously used to build public facilities in the Pacific Northwest.

(2) Federal initiatives to sell the Bonneville Power Administration.

(3) Bonneville Power Administration rate increase and budget expenditure proposals in excess of their actual needs.

(4) Regional uses of surplus firm power, including uses by existing or newly attracted Pacific Northwest industries, to provide long-term use of the surplus for job development.

(5) Power transmission intertie access. [1985 c.780 §1]

Note: 469.950 was enacted into law by the Legislative Assembly but was not added to or made a part of ORS chapter 469 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

PENALTIES

469.990 Penalties. (1) In addition to any penalties under subsection (2) of this section, a

person who discloses confidential information in violation of ORS 469.090, wilfully or with criminal negligence, as defined by ORS 161.085, may be subject to removal from office or immediate dismissal from public employment.

(2)(a) Wilful disclosure of confidential information in violation of ORS 469.090 is punishable upon conviction, by a fine or not more than \$10,000 or imprisonment for up to one year, or both, for each offense.

(b) Disclosure of confidential information in violation of ORS 469.090 with criminal negligence, as defined by ORS 161.085, is punishable, upon conviction, by a fine of not more than \$1,000 for each offense.

(3) Any person who violates ORS 469.825 commits a Class A misdemeanor. [1975 c.606 §20; subsection (3) enacted as 1981 c.49 §11]

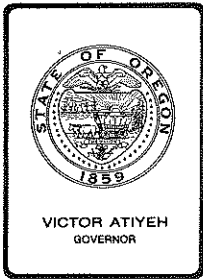
469.992 Civil penalties. (1) A civil penalty in an amount not less than \$1,000 per day nor more than \$25,000 per day for each day of construction or operation in material violation of ORS 469.300 to 469.570, 469.590 to 469.621 and 469.930 or in material violation of any site certificate issued pursuant to ORS 469.300 to 469.570, 469.590 to 469.621 and 469.930 may be assessed by the circuit court.

(2) Violation of an order entered pursuant to ORS 469.550 is punishable upon conviction by a fine of \$50,000. Each day of violation constitutes a separate offense.

(3) A civil penalty in an amount not less than \$100 per day nor more than \$1,000 per day may be assessed by the circuit court for a wilful failure to comply with a subpoena served by the director pursuant to ORS 469.080 (2).

(4) A civil penalty in an amount of not more than \$25,000 per day for each day in violation of any provision of ORS 469.300, 469.530, 469.603 to 469.621 and this section may be assessed by the circuit court upon complaint of the director or of any person injured by the violation. [Formerly 453.994; 1977 c.794 §17; 1981 c.707 §13; 1983 c.273 §4]

469.994 Civil penalty when dealer certificate revoked. (1) The Director of the Department of Energy may impose a civil penalty against a dealer if a final certification or dealer system certification is revoked under ORS 469.180 (1)(b) or (3)(a) or (b). The amount of the penalty shall be equal to the total amount of tax relief estimated to have been provided under ORS 316.116 to purchasers of the system for which a final certificate or dealer's certificate has been



Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission
From: Director
Subject: Agenda Item G, March 14, 1986, EQC Meeting

Proposed Adoption of Rule Changes Which Would Allow Regional Air Pollution Authorities to set a Permit Fee Schedule for Sources Within Their Jurisdiction

Background

At the November 22, 1985 meeting, the Environmental Quality Commission authorized a public hearing on proposed rule changes which would allow regional air pollution authorities to set a permit fee schedule for sources within their jurisdiction. This proposed rule change was requested by the Lane Regional Air Pollution Authority (LRAPA) as a possible strategy to raise revenues necessitated by reductions in funding from local sponsoring entities. A review of administrative and inspection costs associated with LRAPA's present program showed that current permit fees do not cover a sufficient amount of the costs of the source compliance program.

Public notice on the proposed rules (see Attachment I) was published in the Secretary of State's Bulletin and in the Eugene Register Guard on December 15, 1985. LRAPA made a presentation before the Lane Boilers Association in early December and had other meetings with representatives of affected industries in Lane County to review the proposal and explain the effects of the proposal on permit fees. The public notice of the hearing was distributed at these meetings. A public hearing was held in Springfield on January 15, 1986. Two persons submitted testimony in favor of the proposed rule changes (Attachment III & IV). No testimony opposing the rule changes was received.

Discussion

Oral and written testimony was received from John Lively, speaking as Chair of the Board of Directors of the Lane Regional Air Pollution Authority and as Mayor of the City of Springfield, and from Don Arkell, Director of LRAPA. Also present was a representative of Dow Corning of Springfield who offered no testimony.

John Lively briefly explained that LRAPA is funded through contributions from local government entities, federal grants passed through DEQ, state contributions and permit fees. He indicated that a number of factors having significant economic effects on government revenue sources have created large uncertainties in LRAPA's funding in recent years. He explained how the LRAPA Advisory Committee conducted a thorough investigation of whether LRAPA should be maintained as an integral part of local services provided in Lane County. The conclusion drawn from this investigation was that the agency does offer advantages in managing the county's air quality problems in ways which best suit local circumstances. The board and staff began to develop a broad-based strategy which includes cost-reduction measures as well as improving the revenue picture from a variety of sources, including establishing a separate permit fee schedule for LRAPA.

Mr. Lively went on to explain that LRAPA's Board of Directors developed and adopted Resolution No. 86-2 (Attachment V) which enacts a policy that provides a "cap" on the amount of upward adjustment which can be made to the permit fees.

Don Arkell began his testimony by reviewing the three main reasons for requesting authorization to set local permit fees. Those reasons are: the need for additional flexibility to help establish a broader, more stable funding base; to accommodate reasonable cost recovery for the greater level of service provided to local permit holders; and to adjust fee schedules to more accurately reflect local workload distribution. He then stated that LRAPA believes it is entirely consistent with the State's policy of support for regional authorities to approve this request for a needed measure of flexibility to help them adapt to their changing needs and is not contrary to the concept of statewide uniform treatment of industries. The maximum average magnitude of fee adjustments for individual permits under the proposed policy would be in the range of several hundred dollars per year, an amount which would not upset or alter the competitive position of Lane County industries. He pointed out that the local industries have a lengthy history of support for LRAPA which has helped sustain funding from local governments. The local industries recognize the advantages of having an accessible local agency which not only regulates air pollution but assists in problem solving. According to Mr. Arkell, these advantages outweigh any small permit fee differential. He finished his testimony by stressing the fact that this request is part of a general effort under the guidance of the LRAPA Board of Directors, with input from a broad-based constituency of local government organizations and industry, to maintain an effective local air management program at a reasonable cost.

Alternatives

1. The first alternative would be to adopt the rule changes as proposed.
2. An alternative to adopting the proposed rule change would be to do nothing. This would insure that the uniform treatment of industries statewide would be maintained. However, LRAPA believes that even though they are implementing some cost-cutting measures and considering other strategies to raise revenues, without the flexibility to set local permit fees this alternative would limit their ability to acquire increases in revenue to support their ongoing activities.

Summation

1. LRAPA requested authorization to allow regional authorities to adopt, by rule, different fees than the state. A revision to OAR 340-20-165 was proposed.
2. A public hearing was held on the proposal and all comments were in favor of the proposed rule change.
3. The community and participating local governmental entities have consistently provided strong support for LRAPA.
4. The testifiers indicated that the local industries recognize the advantages of an accessible local agency and the additional services provided.
5. According to testimony received, the proposed rule change would not have any significant impact on the competitive positions of Lane County industries since the maximum average magnitude of fee adjustments for individual permits under the proposed policy would be in the range of several hundred dollars per year.
6. A "cap" would be placed on the amount of upward adjustment that can be made to the permit fees. The estimated total annual operating revenue from source categories will not exceed 13 percent of the annual operating budget.

Director's Recommendation

Based upon the summation it is recommended that the Commission adopt the proposed rule change for OAR 340, Division 20, Section 165, as a revision to the State Implementation Plan. This rule change would allow regional air pollution authorities to adopt a permit fee table different from that of the Department.



Fred Hansen

Attachments

- I. Proposed Rule Revision
- II. Agenda Item F, November 22, 1985 EQC Meeting
- III. Testimony of John Lively
- IV. Testimony of Don Arkell
- V. LRAPA Board of Directors' Resolution No. 86-2

Lloyd Kostow:s
229-5186
February 24, 1986

AS2438

Proposed Rule Revision

OREGON ADMINISTRATIVE RULES
CHAPTER 340, DIVISION 20 — DEPARTMENT OF ENVIRONMENTAL QUALITY

Fees

340-20-165 (1) All persons required to obtain a permit shall be subject to a three part fee consisting of a uniform non-refundable filing fee of \$75, an application processing fee, and an annual compliance determination fee which are determined by applying Table 1. The amount equal to the filing fee, application processing fee, and the annual compliance determination fee shall be submitted as a required part of any application for a new permit. The amount equal to the filing fee and the application processing fee shall be submitted with any application for modification of a permit. The amount equal to the filing fee and the annual compliance determination fee shall be submitted with any application for a renewed permit.

(2) The fee schedule contained in the listing of air contaminant sources in Table 1 shall be applied to determine the permit fees, on a Standard Industrial Classification (SIC) plant site basis.

(3) Modifications of existing, unexpired permits which are instituted by the Department or Regional Authority due to changing conditions or standards, receipts or additional information, or any other reason pursuant to applicable statutes and do not require refileing or review of an application or plans and specifications shall not require submission of the filing fee or the application processing fee.

(4) Applications for multiple-source permits received pursuant to OAR 340-20-160 shall be subject to a single \$75 filing fee. The application processing fee and annual compliance determination fee for multiple-source permits shall be equal to the total amounts required by the individual sources involved, as listed in Table 1.

(5) The annual compliance determination fee shall be paid at least 30 days prior to the start of each subsequent permit year. Failure to timely remit the annual compliance determination fee in accordance with the above shall be considered grounds for not issuing a permit or revoking an existing permit.

(6) If a permit is issued for a period less than one (1) year, the applicable annual compliance determination fee shall be equal to the full annual fee. If a permit is issued for a period

greater than 12 months, the applicable annual compliance determination fee shall be prorated by multiplying the annual compliance determination fee by the number of months covered by the permit and dividing by twelve (12).

(7) In no case shall a permit be issued for more than ten (10) years.

(8) Upon accepting an application for filing, the filing fee shall be non-refundable.

(9) When an air contaminant source which is in compliance with the rules of a permit issuing agency relocates or proposes to relocate its operation to a site in the jurisdiction of another permit issuing agency having comparable control requirements, application may be made and approval may be given for an exemption of the application processing fee. The permit application and the request for such fee reduction shall be accompanied by:

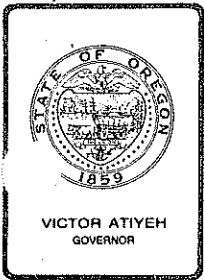
(a) A copy of the permit issued for the previous location; and

(b) Certification that the permittee proposes to operate with the same equipment, at the same production rate, and under similar conditions at the new or proposed location. Certification by the agency previously having jurisdiction that the source was operated in compliance with all rules and regulations will be acceptable should the previous permit not indicate such compliance.

(10) If a temporary or conditional permit is issued in accordance with adopted procedures, fees submitted with the application for an air contaminant discharge permit shall be retained and be applicable to the regular permit when it is granted or denied.

(11) All fees shall be made payable to the permit issuing agency.

"(12) pursuant to ORS 468.535, a regional authority may adopt fees in different amounts than set forth in Table 1 provided such fees are adopted by rule and after hearing and in accordance with ORS 468.065(2)."



Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission
From: Director
Subject: Agenda Item No. F, November 22, 1985, EQC Meeting

Request for Authorization to Conduct a Public Hearing on
Proposed Rule Changes Which Would Allow Regional Air
Pollution Authorities to Set a Permit Fee Schedule for
Sources Within Their Jurisdiction

Background

The Lane Regional Air Pollution Authority (LRAPA) has operated in Lane County since 1968. State law provides for the formation of regional authorities to exercise the same functions within their areas of jurisdiction as the Commission and Department on air quality matters, except that certain emission source categories continue to fall under state regulatory control (automobiles, agricultural, and forestry operations).

For areas where regional authorities exist, the Commission, through the Department, maintains a general oversight role to assure that organization and funding are sufficient, and that the programs conform to state and federal laws.

Through the years, LRAPA has maintained several funding mechanisms, including state and federal grants, contributions from local participating cities and Lane County, permit fees, and fees for service. A number of factors having significant economic effects on government revenue sources have created large uncertainties in LRAPA's funding in recent years.

There is a continuing high level of local support for LRAPA from the community and the participating governing entities. Because of the increasing potential of program disruption due to a downturn in the local economy, there is a clear need to develop a revenue base that is less vulnerable to short-term adverse fluctuations in local economies. One of the candidate strategies being considered to stabilize the revenue base is to adjust the permit fees to more adequately cover the cost of the program. LRAPA now uses fee Table 1 contained in state regulations (OAR 340-20-155).

Fees for permits issued by LRAPA are retained locally. A review of administrative and inspection costs associated with the present program showed that current permit fees do not cover the costs of the source compliance program. There appears to be ample basis for adjusting the overall fee schedule to correct current inequities and recover a greater percentage of costs.

In a letter dated October 11, 1985 (see Attachment 1), Don Arkell, Director of LRAPA, requested that a rule revision be initiated which would allow Regional Air Pollution Authorities to set permit fees for sources within their jurisdiction.

Problem Statement

ORS 468.535 sets out the general functions of regional authorities and establishes powers and limitations. Included in the general functions are those of ORS 468.065, "Issuance of permits; content; fees; use." ORS 468.555 allows the Commission to authorize, by rule, the issuance of permits by regional authorities.

OAR 340-20-185 authorizes local permit programs, pursuant to ORS 468.555. Current regulations do not allow LRAPA to establish its own fee schedule. Before the LRAPA Board of Directors can begin its own process to consider amending the permit fee schedule within its jurisdiction, there must be authorization from the Commission to do so.

One simple way to provide this authorization is a rule change to allow regional authorities to adopt permit fees different than the amounts contained in the Department's rules in accordance with ORS 468.065(2). OAR 340-20-165 could be amended to create a new subsection (12) to read and provide as follows:

"(12) pursuant to ORS 468.535, a regional authority may adopt fees in different amounts than set forth in Table 1 provided such fees are adopted by rule and after hearing and in accordance with ORS 468.065(2)."

Analysis of LRAPA Budget

LRAPA is presently the only regional air pollution authority in Oregon. The proposed rule change would only affect the operation of LRAPA.

In order to illustrate the financial implications for LRAPA, the current agency budget is presented as follows:

Total Budget \$533,500

Revenue Sources:

Local Government Contributions	\$195,000
Federal Grants	151,000
State Special Payment	59,000
Permit Fees	41,000
Cash Forward	58,500
(from Capital Reserve)	
Service Contracts and	29,000
Miscellaneous	

Operating Budget:

Personal Services	\$343,500
Materials/Supplies	160,000
Capital	-0-
Other (Ending Balance)	30,000

A fiscal evaluation of the LRAPA permit program has been made. The cost associated with the permit program is approximately \$68,000 per year. This amount covers the direct and indirect costs incurred to issue, monitor, and maintain compliance for about 180 permitted sources. Other field activities, such as complaint response and regulation of open burning, are not included in the \$68,000 permit program costs. The revenue generated from the permit program using the current fee schedule is approximately \$41,000. LRAPA would not anticipate adjusting the fee schedule to fully cover the current shortfall of \$27,000; but there is a need to recover a significant portion in order for the permit program to be as nearly self-supporting as possible.

In addition to an overall fee adjustment to more adequately recover costs, LRAPA would anticipate some redistribution of the fees within the table to account for specific regional compliance priorities. The designation of the Eugene-Springfield area as a nonattainment area for particulate has necessitated greater emphasis on certain emission source categories. The redistribution of fees is necessary to maintain equity within the fee schedule.

Fiscal Impact

The proposed rule change would in itself have no fiscal impact, but would authorize LRAPA's Board to adopt a fee table with different amounts than those adopted by the Commission. Procedurally, LRAPA would perform its own costs analyses for its permit program, and would base its fee table on anticipated costs as provided by statute. The format, including the types of fees assessed, would be the same as that of the Department. Each source holding a permit would be assessed fees which reflect the actual costs of filing and evaluating permit applications, and of an inspection program to assure and maintain compliance with permit conditions. The Commission would have the opportunity to review and approve any fee schedule that might be adopted by LRAPA's Board when those revised rules are submitted for incorporation into the State Implementation Plan.

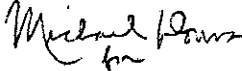
Summary

1. LRAPA is a regional authority which exercises most of the functions of the Department and Commission in Lane County as authorized by the Commission.
2. The community and participating local governmental entities have consistently provided strong and enthusiastic support for LRAPA.
3. LRAPA has experienced uncertainty in its funding from local governments, due to the economic downturn, and seeks to add stability in this area through a variety of means.
4. One such means under consideration is adjustment of permit fees to recover a larger percentage of actual costs of administering the permit program.

5. In order to further consider that option, LRAPA needs authorization from the Commission to set a different fee schedule, pursuant to statutory provisions of ORS 468.065. Authorization is requested to allow regional authorities to adopt, by rule, different fees than the state. A revision to OAR 340-20-165 is proposed.
6. The Commission may grant such authorization, in accordance with ORS 465.535.

Director's Recommendation

It is recommended that the Commission authorize a public hearing to receive testimony on the attached proposed rule revision concerning authorizing Regional Air Pollution Authorities to adopt a permit fee table that is different from the Department's.


Fred Hansen

Attachments

1. Letter of October 11, 1985, from Don Arkell, Director, LRAPA
2. Proposed Rule Revision (OAR 340-20-165(12))
3. Proposed Notice of Public Hearing
4. Rulemaking Statement

L. Kostow:s
229-5186
October 25, 1985

AS1874

LANE REGIONAL

AIR POLLUTION AUTHORITY



October 11, 1985

Fred Hansen, Director
Dept. of Environmental Quality
P. O. Box 1760
Portland, OR 97207

Re: Authorization to Change Permit Fees

Dear Fred:

As I'm sure you are aware, LRAPA's financial picture has been somewhat tenuous, due primarily to reductions in revenues from our local sponsoring entities. To combat this state of affairs, we have a continuing program to institute cost-cutting measures and have been continuing to expand and diversify the revenue base for LRAPA. Our long-term goal is to provide greater financial stability for the program. During the course of this effort, a number of candidate strategies to cut costs and raise revenues have been developed and implemented.

One of the developing revenue strategies is to increase cost recovery in the permit program through increased permit fees. Even though we are in the preliminary stages of developing this strategy, we have encountered a legal problem. According to Michael Huston of the state's Attorney General's office, Oregon Revised Statutes require that, in order for regional authorities to conduct permit programs, there must be explicit authority granted by rule from the Commission. While OAR provides adequate authority to operate a program, it apparently does not provide sufficient authority to set our own fee amounts. Our legal counsel, Tim Sercombe, agrees with this interpretation. The difficulty, of course, is that this places limits on the options available to stabilize our local revenue, and we cannot proceed further unless the Commission's rules allow it.

On behalf of the LRAPA Board of Directors, I am requesting that LRAPA be authorized to establish separate permit fee amounts than those established by the Commission. In discussing the matter with the staff of the Air Quality Division, it appears that the most appropriate mechanism for this would be to amend state rules.

It is understood that the purpose of this request is to allow LRAPA some flexibility within the statutory constraints to establish its own permit fee amounts, and that actual implementation of a separate fee schedule would require a separate rulemaking by the LRAPA Board.

Your support on this issue is appreciated. We believe there has been, overall, a complimentary relationship between LRAPA's air program and that of DEQ. There is strong local support, and an expressed desire to maintain

Attachment 1
Agenda Item
November 22, 1985
(503) 686-7618 EQC Meeting
1244 Walnut Street, Eugene, Oregon 97403

Donald R. Arkell, Director

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
R E C E I V E D
OCT 15 1985

OFFICE OF THE DIRECTOR

71

Fred Hansen
October 7, 1985
2

maximum local jurisdiction on air quality matters in Lane County. While we recognize that the idea of permit fee adjustment may not have universal appeal, particularly among the regulated industries, we believe that the local option should still be available.

I have provided appropriate background material to the Air Quality Division staff for technical review. If there are any questions, we will be pleased to respond.

Thank you for your consideration.

Sincerely,



Donald R. Arkell
Director

DRA/mjd

c: Michael Huston
Tim Sercombe
Tom Bispham

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

**Proposed Changes in Authority for Regional Air
Pollution Authorities to Establish Permit Fees
NOTICE OF PUBLIC HEARING**

Date Prepared: November 1, 1985
Hearing Date: January 15, 1986
Comments Due: January 22, 1986

**WHO IS
AFFECTED:**

Industrial air pollution sources in Lane County.

**WHAT IS
PROPOSED:**

The Department of Environmental Quality is proposing to amend OAR 340-20-165 to allow Regional Air Pollution Authorities to set permit fees for industrial sources within their jurisdiction that are different from the Department's fees.

**WHAT ARE THE
HIGHLIGHTS:**

- o Industrial permit fees for sources under the jurisdiction of the Lane Regional Air Pollution Authority (LRAPA) are currently the same as the fees for sources regulated by DEQ.
- o LRAPA has requested authority to set fees that are different from DEQ's.
- o This proposed rule change would not change fees but would establish the authority for LRAPA's Board to do so in Lane County.

**HOW TO
COMMENT:**

Copies of the complete proposed rule package may be obtained from the Air Quality Division in Portland (522 S.W. Fifth Avenue) or the Lane Regional Air Pollution Authority. For further information contact Lloyd Kostow at 229-5186.

A public hearing will be held before a hearings officer at:

1:00 p.m.
January 15, 1986
Springfield City Hall
Conference Room 2

Oral and written comments will be accepted at the public hearing. Written comments may be sent to the DEQ Air Quality Division, P.O. Box 1760, Portland, OR 97207, but must be received by no later than January 22, 1986.



P.O. Box 1760
Portland, OR 97207

8/10/82

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 1-800-452-7813, and ask for the Department of Environmental Quality.



**WHAT IS THE
NEXT STEP:**

After public hearing the Environmental Quality Commission may adopt rule amendments identical to the proposed amendments, adopt modified rule amendments on the same subject matter, or decline to act. The adopted rules will be submitted to the U. S. Environmental Protection Agency as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on March 14, 1986, as part of the agenda of a regularly scheduled Commission meeting.

A Statement of Need, Fiscal and Economic Impact Statement, and Land Use Consistency Statement are attached to this notice.

AS1874.A

Proposed Rule Revision

OREGON ADMINISTRATIVE RULES
CHAPTER 340, DIVISION 20 — DEPARTMENT OF ENVIRONMENTAL QUALITY

Fees

340-20-165 (1) All persons required to obtain a permit shall be subject to a three part fee consisting of a uniform non-refundable filing fee of \$75, an application processing fee, and an annual compliance determination fee which are determined by applying Table 1. The amount equal to the filing fee, application processing fee, and the annual compliance determination fee shall be submitted as a required part of any application for a new permit. The amount equal to the filing fee and the application processing fee shall be submitted with any application for modification of a permit. The amount equal to the filing fee and the annual compliance determination fee shall be submitted with any application for a renewed permit.

(2) The fee schedule contained in the listing of air contaminant sources in Table 1 shall be applied to determine the permit fees, on a Standard Industrial Classification (SIC) plant site basis.

(3) Modifications of existing, unexpired permits which are instituted by the Department or Regional Authority due to changing conditions or standards, receipts or additional information, or any other reason pursuant to applicable statutes and do not require refiling or review of an application or plans and specifications shall not require submission of the filing fee or the application processing fee.

(4) Applications for multiple-source permits received pursuant to OAR 340-20-160 shall be subject to a single \$75 filing fee. The application processing fee and annual compliance determination fee for multiple-source permits shall be equal to the total amounts required by the individual sources involved, as listed in Table 1.

(5) The annual compliance determination fee shall be paid at least 30 days prior to the start of each subsequent permit year. Failure to timely remit the annual compliance determination fee in accordance with the above shall be considered grounds for not issuing a permit or revoking an existing permit.

(6) If a permit is issued for a period less than one (1) year, the applicable annual compliance determination fee shall be equal to the full annual fee. If a permit is issued for a period

greater than 12 months, the applicable annual compliance determination fee shall be prorated by multiplying the annual compliance determination fee by the number of months covered by the permit and dividing by twelve (12).

(7) In no case shall a permit be issued for more than ten (10) years.

(8) Upon accepting an application for filing, the filing fee shall be non-refundable.

(9) When an air contaminant source which is in compliance with the rules of a permit issuing agency relocates or proposes to relocate its operation to a site in the jurisdiction of another permit issuing agency having comparable control requirements, application may be made and approval may be given for an exemption of the application processing fee. The permit application and the request for such fee reduction shall be accompanied by:

(a) A copy of the permit issued for the previous location; and

(b) Certification that the permittee proposes to operate with the same equipment, at the same production rate, and under similar conditions at the new or proposed location. Certification by the agency previously having jurisdiction that the source was operated in compliance with all rules and regulations will be acceptable should the previous permit not indicate such compliance.

(10) If a temporary or conditional permit is issued in accordance with adopted procedures, fees submitted with the application for an air contaminant discharge permit shall be retained and be applicable to the regular permit when it is granted or denied.

(11) All fees shall be made payable to the permit issuing agency.

"(12) pursuant to ORS 468.535, a regional authority may adopt fees in different amounts than set forth in Table 1 provided such fees are adopted by rule and after hearing and in accordance with ORS 468.065(2)."

RULEMAKING STATEMENTS

for

Proposed Changes in Industrial Permit Fee Rules
For Regional Air Pollution Authorities

Pursuant to ORS 183.335, these statements provide information on the intended action to amend a rule.

STATEMENT OF NEED:

Legal Authority

This proposal amends OAR 340-20-165. It is proposed under authority of ORS 465.065(2) and ORS 468.535.

Need for the Rule

Lane Regional Air Pollution Authority (LRAPA) has requested authority to establish an industrial permit fee schedule that is different from DEQ's. The need for this authority is based on the differing revenue needs of LRAPA compared to DEQ.

Principal Documents Relied Upon

1. Letter from Don Arkell, Director of LRAPA, dated October 11, 1985.

FISCAL AND ECONOMIC IMPACT STATEMENT:

This proposed rule change has no direct economic impact. The proposed change would allow the LRAPA Board of Directors to modify the Air Contaminant Discharge Permit fees assessed on industrial sources in Lane County.

LAND USE CONSISTENCY STATEMENT:

The proposed rule does not affect land use as defined in the Department's coordination program approved by the Land Conservation and Development Commission.

AS1874.B

DEPARTMENT OF ENVIRONMENTAL QUALITY

PUBLIC HEARING: On Proposed Changes in Authority for Regional Air
Pollution Authorities to Establish Permit Fees

DATE: January 15, 1986
TIME: 1:00 p.m.
LOCATION: Springfield City Hall, Conference Room 2

* * * * *

STATEMENT OF JOHN LIVELY

My name is John Lively, and I'm appearing today in two capacities, as Chair of the Board of Directors of the Lane Regional Air Pollution Authority (LRAPA), and as Mayor of the City of Springfield, one of four local government participants in the authority.

The request before the commission to extend authority to LRAPA for the flexibility to adjust permit fees is important to the future of the authority. As you are aware, the authority is funded extensively through contributions from local government entities, such as the City of Springfield. Other participants include the cities of Eugene and Cottage Grove and Lane County. The authority also receives funding support from federal grants passed through DEQ, a payment by DEQ to help offset local program costs, and permit fees which help offset the costs of administering the stationary source permit program in Lane County.

Changes in the financial pictures of local governments, in general, have caused re-evaluation of funding mechanisms to maintain basic services at the local level. Such recent prospects as reduced or eliminated federal revenue sharing, tax reform, and other reductions in federal assistance have established a pattern of major cost-reduction measures and greater reliance on cost-recovery mechanisms to help fund local and municipal services.

In recognition of the present and future impacts of reduced assistance programs to local entities and the secondary effects on the ability to continue to support LRAPA, the Board of Directors three years ago set out to evaluate the local program, its role in the local community, and whether or not it should be maintained as an integral part of the total package of local services provided in Lane County. A thorough evaluation was conducted by the LRAPA Advisory Committee, and the conclusion was that the agency performs essential services and offers advantages in managing our air quality problems that are not available in other areas of the state without local programs. With that conclusion, the next issue was how to fund the agency in a way which was equitable, broad-based, and at a level which would continue acceptable service delivery.

At the same time, the major participants in the agency, including governments and industry, also requested that the agency take whatever steps it could to broaden the revenue base and stabilize funding for the agency so that it is more resistant to major economic fluctuations.

The board and staff have worked hard to implement a broad-based strategy which includes cost-reduction measures, as well as improving the revenue picture from a variety of sources. As a result, there has been some success in increasing the level of federal support for the basic program, some increase in the state contribution to adjust for inflation, some additional funding for outside service contracts. In addition, cost-reduction measures have succeeded in reducing the authority's overhead costs, substantially, along with efficiency improvement and changes in staffing.

It is in this context that this request is made.

One of the advantages of having a local agency is the flexibility it affords to address the program problems that are faced by the regulated industry and the community, as well as the management and administrative problems of the community in general, in ways which best suit local circumstances. We believe, in this same light, that we should have the flexibility to provide a financing plan to maintain the agency's activities. Permit fees are a part of that financial plan.

During our discussions of this request, there was significant concern expressed by local industries that the goal of providing a broad base of funding would not be advanced if the board, under any plan to change fees, simply shifted the burden from local government contributions to permit fees. Although this has never been the intent of the board, the authority developed and adopted a policy which would provide some room to adjust fees upward, if needed, and at the same time provide a "cap" to be placed on the amount of upward adjustment possible. The formula which establishes the cap ties the upper limit of permit fees to the total funding for the basic program; thus there are clear consequences, according to the policy, of significant changes in local contributions. In effect, the policy serves to keep local sources of revenue in the boat together, and helps maintain the broad funding base we all seek. The resolution which enacts the policy is attached for the record.

We think that the policy of self-restraint to address the concerns of industry demonstrates that their support, as well as that of local government, is justified. There appears to be a willingness on the part of local contributors--industry and government alike--to do their fair share to maintain the local program. We are asking the commission to help in that regard by allowing us to do what we can to help ourselves.

DEPARTMENT OF ENVIRONMENTAL QUALITY

PUBLIC HEARING: On Proposed Changes in Authority for Regional Air
Pollution Authorities to Establish Permit Fees

DATE: January 15, 1986
TIME: 1:00 p.m.
LOCATION: Springfield City Hall, Conference Room 2

* * * * *

STATEMENT OF DON ARKELL

My name is Don Arkell, and I am appearing on behalf of the Lane Regional Air
Pollution Authority.

As we've earlier submitted in our request for authorization to set local
permit fees, there are three principal reasons for such request:

1. The agency needs additional flexibility to help establish a broader
and more stable funding base.
2. To accommodate reasonable cost recovery for the greater level of
service local permit holders receive from LRAPA.
3. To adjust fee schedules for inequities, to more accurately reflect
local workload distribution among permitted source categories.

Traditionally, LRAPA has utilized a table contained in state regulations to
establish fee schedules. The state schedule has served this purpose for us, as
well as DEQ, for years. We have found, however, that our present needs are
significantly different now, and they cannot be adequately addressed if we are
limited to the statewide fee schedule. Simply put, as part of the overall
program, we'd need to make the permit administration more self-supporting.

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In that regard, there has been question as to whether or not our request for flexibility to set local permit fees is contrary to the concept of uniform treatment of industries statewide, and whether the prospects of higher local permit fees, which would be possible if this request is approved, are justified.

First, we believe that it is entirely consistent with the state's policy of support for regional authorities to approve this request for a needed measure of flexibility to help us adapt to our changing needs. The community recognizes the advantages of local control, primarily the ability to exercise a degree of local independence to tailor solutions to local air quality problems which are least disruptive and costly--a fundamental reason regional authorities are provided for in the State of Oregon.

Second, the maximum average magnitude of fee adjustments for individual permits under our new policy would be in the range of several hundred dollars per year, an amount which would not upset or alter the competitive positions of Lane County industries. Our local industries also have a lengthy history of support for LRAPA which has, on more than one occasion, helped sustain funding from local governments. We believe the role that industry has in our local economy will always be a central consideration in our deliberations, and we don't conceive a case when disadvantage will result. In fact, there are recognized advantages to local industries because an accessible local agency is near at hand which not only regulates, but assists in problem solving. We think this outweighs any small permit fee differential which may result.

By fostering working relationships with local industries as well as regulatory presence, LRAPA provides considerable added service, such as:

- Consultation in detail on how future plans might be affected by environmental requirements and how to tailor plans to comply with requirements;

- Accessibility, convenience and quick turnaround on responses to inquiries;
- Continual follow-up on progress to resolve problems at small industries;
- Regular surveillance and source emissions evaluations;
- More frequent supplemental field contact between formal inspections which helps identify and resolve potential operational problems;
- A policy of prevention of excess emissions and maintenance of high compliance rates;
- Close-by assistance in meeting processing requirements;
- Early response and resolution of complaints.

We think that the additional service level to local industry cited by these examples provides significant real benefits which serve to offset fee adjustments which may be considered.

We have also discovered, through our workload studies, what we consider to be true inequities in the current table, which we believe should be corrected. We intend to make such adjustments as part of any rulemaking.

Finally, it should be stressed again that this request is not made in a vacuum. It is part of a general effort under the guidance of the LRAPA Board of Directors, with input from a broad-based local constituency of local government organizations and industry who provide most of the program support, to maintain an effective local air management program at a reasonable cost.

We have been working hard to meet the challenge and, with continuing support by the commission, we believe we will succeed.

RESOLUTION NO. 86-2

A RESOLUTION ADDRESSING LOCAL CONCERNS
FOR LRAPA'S SETTING OF FEES FOR
AIR CONTAMINANT DISCHARGE PERMITS

The Board of Directors of the Lane Regional Air Pollution Authority finds:

1. The Lane Regional Air Pollution Authority Board of Directors seeks authorization from the State of Oregon Environmental Quality Commission to set Air Contaminant Discharge Permit fees according to statutory restrictions, using as a basis local program cost estimates rather than statewide cost estimates.
2. Statutory provisions require such fees be established based on anticipated costs of administering LRAPA's permit program.
3. There is a need to consult with affected permit holders prior to revisions of permit fees.
4. There is desire to establish by policy specific guidelines as to upper limit of fees, to provide assurance to permit holders and to the Commission that fee adjustments will be consistent with legislative intent.
5. LRAPA's FY 85/86 total permit program costs, estimated according to ORS 468.065(2), are approximately 13 percent of the total 85/86 authorized budget. It is not expected that the cost of LRAPA's permit program for the classes of permits now issued will have substantial variation from its present proportion to the total program.
6. It may still be possible that new program requirements involving new classes of sources and new pollutant categories not currently under permit could create significant additional costs beyond the current permit program.

NOW, THEREFORE,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE LANE REGIONAL AIR POLLUTION AUTHORITY, AS FOLLOWS:

1. If air contaminant discharge fee amounts are authorized to be established locally, fee schedules will be based so that the estimated total annual operating revenue from source categories now permitted under Title 34, Table A, of the Authority's Rules and Regulations does not exceed 13 percent of the annual operating budget.
2. Before a proposed fee adjustment is considered at a public hearing by the Board of Directors, LRAPA staff will consult with representatives of affected permitted sources and prepare a report of consultation for board review.

RESOLUTION NO. 86-2

ADDRESSING LOCAL CONCERNS FOR
LRAPA'S SETTING OF FEES FOR AIR
CONTAMINANT DISCHARGE PERMITS

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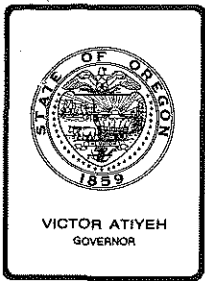
3. In the event that additional types of pollutants are regulated at additional types of source categories, such that one or more new program elements are introduced, any revenues from new fees for such new program are to be excluded from the 13 percent limitation.

The foregoing resolution adopted this 14th day of January, 1986.

ATTEST:

Secretary to Board of Directors

Chair, Board of Directors



Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission
From: Director
Subject: Agenda Item No. H, March 14, 1986, EQC Meeting

Proposed Adoption of Nuisance Phytoplankton Growth Rule

Background

At the January 31, 1986 meeting, the Commission reviewed a report that summarized and evaluated hearing testimony and proposed the adoption of a rule to better address nuisance phytoplankton growth (Attachment C). Upon hearing further testimony, the Commission tabled taking action but gave the Department policy direction as follows:

1. Eliminate a proposed Nutrient Rule from further consideration.
2. Reword the Nuisance Phytoplankton Growth Rule to indicate that:
 - a. No enforcement of moratorium action would be taken unless specified in the adopted control strategy.
 - b. A potential problem would not intentionally be made worse. Commissioner Denecke clarified this would apply to new sources, not additional connections to present sources. However, zero discharge would not be the standard.

The Commission asked that the proposed Rule be revised and brought to the next EQC meeting (Attachment A).

Department Evaluation and Action

Department staff reviewed testimony presented at the January 31, 1986 EQC meeting and the EQC guidance. Modifications of Nuisance Phytoplankton Growth Rule were drafted and sent out to those who testified and others who were represented at the January 31, 1986 EQC meeting. Meetings were held at 2:00 p.m., on February 24 and February 26, 1986, to gain further input

on the rewording. The modified Rule with changes shown can be found in Attachment B. Four general modifications were made as follows:

1. A major concern of the City of Portland which was supported by several other municipalities was with the following wording contained in Paragraph (1) of the proposed standard (Attachment B):

"No wastes shall be discharged and no activities shall be conducted which will cause average Chlorophyll a concentrations to exceed the following values: ..."

This wording could be interpreted as prohibiting point source and non-point source discharges in waters where the chlorophyll a values are exceeded. The intent of the Paragraph was to establish chlorophyll a values above which the Department would take a subsequent course of action -- further study. Therefore, the wording was modified to clarify the intent. The rewording is shown in Attachment B. Essentially, the paragraph of concern was deleted and was replaced by a clearer statement of purpose.

2. Concern was expressed by the City of Tualatin about a potential stigma to economic development by using the declaration of "non-attainment" (Paragraph (2) (a) in Attachment B). This declaration under the Clean Air Act and Oregon Administrative Rules requires specific courses of action to achieve attainment and can have a significant impact on the growth and development of an area. The intent of its useage in the proposed Rule was to give a more formalized indication of which water bodies are in exceedance of the chlorophyll a values. However, the course of action specified is to determine if beneficial uses are impaired and, if so, to specify a control strategy where technically and economically practicable. The Department agrees that there could be the unintended potential for a "stigma". The Department feels that Paragraph (2) (a) in Attachment B could be deleted without affecting the proposed course of action.
3. The Oregon Environmental Council was concerned about the potential of making a problem worse by allowing a new activity or discharges in an area where the values are exceeded but a study has not yet been carried out. The Commission agreed that the intent to not intentionally make a potential problem worse should be clarified. Paragraph (2) (d) was added (Attachment B) to clarify conditions under which new activities (which the Department approves) and new or additional (above currently approved permit limits) discharge loadings from point sources could be approved. Approval could be made provided that it is determined that beneficial uses would not be significantly impaired.
4. Minor changes and clarifications to wording based on additional staff review were made.

Summation

1. The Commission authorized a hearing to receive testimony on two alternatives rules for addressing nuisance growth and nutrients on September 27, 1985.
2. Notice of public hearings was published in the Secretary of States' Bulletin on November 1, 1985, and mailed to various Departmental mailing lists.
3. Hearings were held in Portland on November 18, 1985; La Grande on November 25, 1985; and Medford on December 3, 1985. The hearing record closed on December 6, 1985 but all testimony received following this date was accepted.
4. Testimony was summarized, evaluated, and presented to EQC at the January 31, 1986 meeting. EQC tabled taking action but directed the Department to make specific rewording to the Nuisance Phytoplankton Growth Rules and to eliminate a proposed Nutrient Rule from further consideration.
5. The Nuisance Phytoplankton Rule is contained in Attachment A.

Director's Recommendation

Based on the summation, it is recommended that the Commission adopt the Nuisance Phytoplankton Rule (Attachment A) to OAR 340-41-150.



Fred Hansen

- Attachments:
- A. Proposed Rule Recommended for EQC Adoption
 - B. Modifications to the Rule Recommended for EQC Adoption on 1/31/86
 - C. Agenda Item O, January 31, 1986, EQC Meeting

Andy Schaedel:h
229-5983
February 19, 1986
WH616

Nuisance Phytoplankton Growth

340-41-150 The following values and implementation program shall be applied to lakes, reservoirs, estuaries and streams, except for ponds and reservoirs less than 10 acres in surface area, marshes and saline lakes:

- (1) The following average Chlorophyll a values shall be used to identify water bodies where phytoplankton may create a nuisance condition and may impair the recognized beneficial uses:
 - (a) Natural lakes which thermally stratify: 0.01 mg/l
 - (b) Natural lakes which do not thermally stratify, reservoirs, rivers and estuaries: 0.015 mg/l

Average Chlorophyll a values shall be based on the following methodology (or other methods approved by the Department): a minimum of three (3) samples collected over any three consecutive months at a minimum of one representative location (e.g. above the deepest point of a lake or reservoir or at a point mid-flow of a river) from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom (the lesser of the two depths); analytical and quality assurance methods shall be in accordance with the most recent edition of Standard Methods for the Examination of Water and Wastewater.

- (2) Upon determination by the Department that the values in OAR 340-41-150(1) are exceeded, the Department shall:
 - (a) In accordance with a schedule approved by the Commission, conduct such studies as are necessary to describe present water quality; determine the impacts on beneficial uses; determine the probable causes of the exceedance and beneficial use impact; and develop a proposed control strategy for attaining compliance where technically and economically practicable. Proposed strategies could include standards for additional pollutant parameters, pollutant discharge load limitations, and other such provisions as may be appropriate.

Where natural conditions are responsible for exceedance of the values in OAR 340-41-150(1) or beneficial uses are not impaired, the values in OAR 340-41-150(1) may be modified to an appropriate values for that water body;
 - (b) Conduct necessary public hearings preliminary to adoption of a control strategy, standards or modified values after obtaining Commission authorization;
 - (c) Implement the strategy upon adoption by the Commission;
- (3) In cases where waters exceed the values in OAR 340-41-150(1) and the necessary studies are not completed, the Department may approve new activities (which require Department approval), new or additional (above currently approved permit limits) discharge loadings from point sources provided that it is determined that beneficial uses would not be significantly impaired by the new activity or discharge.

MODIFICATIONS TO THE RULE RECOMMENDED FOR EQC ADOPTION AT
JANUARY 31, 1986 EQC MEETING

[STANDARDS APPLICABLE TO ALL BASINS]

Nuisance Phytoplankton Growth

340-41-150 The following [standard] values and implementation program shall be applied to lakes, reservoirs, estuaries and streams, except for ponds and reservoirs less than 10 acres in surface area, marshes, and saline lakes[, to identify water bodies where phytoplankton may create a nuisance condition and may affect the recognized beneficial uses]:

- (1) [No wastes shall be discharged and no activities shall be conducted which will cause average Chlorophyll a concentrations to exceed the following values:] The following average Chlorophyll a values shall be used to identify water bodies where phytoplankton may create a nuisance condition and may impair the recognized beneficial uses:

(a) Natural lakes which thermally stratify: 0.01 mg/l

(b) Natural lakes which do not thermally stratify, reservoirs, rivers and estuaries: 0.015 mg/l

Average chlorophyll a [concentrations] values shall be based on the following [collection] methodology (or other methods approved by the Department): a minimum of three (3) samples collected over any three consecutive months at a minimum of one representative location (e.g., above the deepest point of a lake or reservoir or at a point mid-flow of a river) from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom (the lesser of the two depths)[.] ; [A] analytical and quality assurance methods shall be in accordance with the most recent edition of Standard Methods for the Examination of Water and Wastewater. [s or methodology approved by the Department.]

- (2) Upon determination by the Department that the [standard] values in [Paragraph (1) is] OAR 340-41-150(1) are exceeded, the Department shall:

[(a) Declare the appropriate stream reach or water body to be in non-attainment with the standard.]

[(b)] (a) In accordance with a schedule approved by the Commission, conduct such studies as are necessary to describe present water quality; determine the impacts on beneficial uses; determine the probable causes of the [standard violation] exceedance and beneficial use impact; and develop a proposed control strategy for attaining compliance where technically and economically [feasible] practicable. Proposed strategies could include standards for additional pollutant parameters, pollutant discharge load limitations, and such other provisions as may be appropriate.

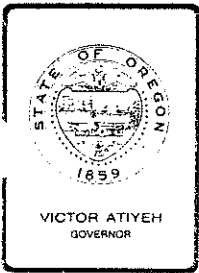
Where natural conditions are responsible for exceedance of the [standard] values in [subsection (1) above,] OAR 340-41-150(1) or beneficial uses are not impaired, the [standard] values in [subsection (1)] OAR 340-41-150(1) may be modified to an appropriate level for that water body.

[(c)] (b) Conduct necessary public hearings preliminary to adoption of a control strategy, [and additional] standards or modified values after obtaining commission authorization.

[(d)] (c) Implement the strategy upon adoption by the Commission.

(3) In cases where waters exceed the values in OAR 340-41-150(1) and necessary studies are not completed, the Department may approve new activities (which require Department approval), new or additional (above currently approved permit limits) discharge loadings from point sources provided that it is determined that beneficial uses would not be significantly impaired by the discharge or new activity.

Andy Schaedel:c
WC109
229-5983
January 22, 1986



Environmental Quality Commission

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522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No 0, January 31, 1986, EQC Meeting

Proposed Adoption of Standards for Nuisance
Phytoplankton Growth

BACKGROUND

At the September 27, 1985 meeting, the Environmental Quality Commission (EQC) reviewed an informational report regarding water quality standards for nutrients, (Attachment F) and received testimony on the subject. Excess nutrients are a concern due to the potential occurrence of "nuisance" plant growth that may interfere with the beneficial uses of a water body. Beneficial uses that can be affected include: swimming, boating, fishing, water supply, animal watering and aesthetics. Aquatic growth can be divided into three plant communities: phytoplankton (floating algae); periphyton (attached algae); and macrophyton (rooted aquatic plants). Whether or not these plant communities will exist in a water body or exist in nuisance proportions will depend on a variety of factors including: nutrient availability, sunlight, current velocity, temperature and substrate. Two alternative standards that would enable the Department to better address nuisance aquatic growth were presented (Attachment B).

Alternative 1 addresses nuisance phytoplankton growth. A chlorophyll *a* standard of 0.01 mg/l shall not be exceeded as an average over a three (3) month period. If exceeded, the water body is declared to be in non-attainment. The Department will conduct further study (in accordance with a schedule approved by the Commission) to determine probable causes, beneficial use impacts, control strategy alternatives, or other appropriate actions. Necessary public hearings will be held and a control strategy implemented upon authorization and adoption by the Commission.

Alternative 2 addresses nutrients. Specific concentrations for total phosphate-phosphorus (as a summer average), nitrate-nitrogen and un-ionized ammonia shall not be exceeded. If exceeded, the standard shall become an effluent standard for point source discharges to such waters. Best management practices for non-point sources shall be evaluated and revised as necessary to attain compliance. Where standards are exceeded, increments allocated to new or expanded sources shall not exceed 10 percent of the difference between the ambient level and the standard. Specific standards for individual water bodies may replace the suggested standard.

The Commission directed Department staff to take both alternatives to public hearing to receive further testimony before taking any action. Public notice of the hearings (Attachment F) was published in the Secretary of States' Bulletin on November 1, 1985. Copies of the public notice and the informational report were mailed to the interested public using various water quality program mailing lists. Three public hearings were held: Portland on November 18, 1985; La Grande on November 25, 1985; and Medford on December 3, 1985. The hearing record remained open until 5:00 pm on December 6, 1985. All written testimony, including those letters received after the closing date, were accepted. The Department summarized the hearing record (Attachment C) and evaluated the testimony (Attachment D). Written testimony was sent to the Commission separately and is available to the public upon request.

DEPARTMENT EVALUATION AND CONCLUSIONS

Testimony received (Attachment C) was directed at the possibility that the Commission could adopt either alternative, adopt modifications to the alternatives, adopt both alternatives, adopt a combination of alternatives, or take no action. In addition, the Department invited projections of fiscal and economic impact. As a consequence, the Department received a broad range of testimony. The Department's evaluation of the hearing record (Attachment D) focused on eight issues (in the form of questions). Major concerns focused on the fact that there is no single numeric value for a parameter(s) which would describe when a use would be impaired due to nutrients or nuisance aquatic growth; the course of action required upon exceedence of a numeric standard; and the cost versus benefit of complying with a numeric standard.

The following is a further summary of the staff evaluation and conclusions as they related to the two alternatives contained in Attachment B and to additional suggestions made in the testimony:

EVALUATION OF TESTIMONY ON ALTERNATIVE 1 - NUISANCE AQUATIC GROWTH STANDARD

Out of 45 responses, 12 testifiers supported this alternative or a modification of this alternative, 6 testifiers supported this alternative in combination with alternative 2 and 5 testifiers although they would prefer no action at this time, if action were to be taken they stated that this alternative was better than alternative 2.

Alternative 1 was supported in the testimony for the following reasons:

- o Chlorophyll concentrations are a measurement of algal biomass and would be a better indicator of waters where nuisance phytoplankton conditions may be found.
- o The course of action prescribed (further study) is advantageous given the subjective nature of the numeric limits and the fact that the criteria do not directly relate to use impairment. This course of action consists of a logical series of steps from the assessment of whether a problem exists through to the development and implementation of a control strategy if one is deemed necessary and feasible.

- o The course of action gives better assurance that environmental benefit will result from the recommended control strategy and would avoid inappropriate responses to non-attainment (such as when phosphorus is not the limiting nutrient or when natural contributions are the primary nutrient source). Site specific data will be used to determine if uses are being impacted and would identify limiting nutrients, nutrient sources, and feasible control strategies when needed. Factors such as natural background concentrations can be readily identified and addressed under this alternative.
- o The hearing process prior to adoption and implementation of the control strategy gives an opportunity for factors such as cost to be discussed and allows affected parties a chance to comment.
- o Relative priorities for studies will be established by the Commission giving assurance that staff and financial resources are properly committed.

Alternative 1 was opposed for the following reasons:

- o Chlorophyll concentrations can be highly variable and may be misleading in that they can reflect other algal populations such as periphyton (attached algae) rather than phytoplankton (floating algae). The periphyton concentrations would be a result of conditions upstream and would not necessarily indicate a problem at the point of measurement.
- o The suggested chlorophyll levels are subjectively determined and do not necessarily indicate that a use impairment exists. The levels found may reflect natural conditions.
- o Necessary studies could be quite costly and often are not carried out due to funding, political and technical difficulties.

Several modifications to Alternative 1 were suggested:

- o Different chlorophyll levels should be specified to recognize the differences in the physical characteristics in water bodies, natural differences in productivity in these water bodies and that use impairment would occur at different levels. Analysis of Oregon data and more recent literature should be used in the development of these levels. A procedure for determining "nuisance" conditions is needed.
- o Given that phytoplankton concentrations (thus chlorophyll levels) and growth rates are quite dynamic and variable, methodology should be described to indicate collection, analytical and statistical methods to be used.
- o Minor modifications should be made to the wording to indicate proper action when natural sources are responsible for the growth or when uses are not impaired at that chlorophyll level.

Based on the testimony, if alternative 1 were to be adopted the modifications suggested would enhance the standard.

EVALUATION OF TESTIMONY ON ALTERNATIVE 2 - NUTRIENT STANDARDS

Out of 45 responses, 1 testifier supported this alternative or a modification of this alternative and 6 testifiers supported this alternative in combination with Alternative 1. Five testifiers opposed this alternative in their recommendation that no alternative be adopted or, if an alternative is adopted, it shall be alternative 1.

Alternative 2 was supported in the testimony for the following reasons:

- o Nutrient levels would give the Department a screening mechanism for the potential for nuisance growth.
- o The course of action provides dischargers with a consistent framework for compliance. Nutrient standards would be the basis for establishing total maximum daily nutrient loads for point source discharges. It could force innovative development and use of treatment alternatives and force a greater focus on addressing non-point source problems.

Alternative 2 was opposed for the following reasons:

- o Water quality problems due to algae cannot reliably be predicted based on phosphorus concentrations. There is no universal relationship between nutrient levels and aquatic growth. Recent lake studies indicate that growth potential is better predicted by annual nutrient loadings to a water body and not by nutrient concentrations.
- o The suggested phosphorus levels are subjectively determined and do not necessarily indicate that a use impairment exists. The levels found may reflect natural conditions.
- o The phosphorus levels that would be specified as effluent limits are not routinely achieved by Advance Waste Treatment (AWT) technologies.
- o The specified course of action that automatically requires nutrient removal practices upon exceedence of the criteria could be quite costly (especially for wastewater and storm water treatment and agricultural practices) with the potential of not achieving any environmental benefit. This standard may adversely affect economic development.
- o The relative priority (given limited resources) of achieving nutrient standards as opposed to the protection of health and aquatic life is not adequately addressed.

- o There is limited flexibility to address nutrient sources including natural sources and develop suitable control strategies in this alternative as opposed to Alternative 1. The standard may not be achievable under any circumstances yet nutrient control practices are specified unless a water body specific modification of the standard is made.

Several modifications to Alternative 2 were suggested:

- o Nutrient limits could be combined with chlorophyll limits and a suitable course of action could be suggested.
- o Collection, analytical and statistical methods should be specified.
- o Further work should be done to develop and establish regional nutrient standards.

EVALUATION OF OTHER SUGGESTIONS

Several other suggestions were made that deserve further consideration:

- o Twenty testifiers recommended no action on the adoption of either Standard at this time based on the need not adequately being justified, the fiscal impact not sufficiently being analyzed, and current narrative standards being adequate to address problems. The Department contends that the adoption of Alternative 1, as modified in Attachment A, would provide a more uniform means of identifying potential nuisance conditions and establish a consistent course of action to follow upon identification. The need for implementation of control strategies and the fiscal impact would be developed on a site or basin specific basis from the required study.
- o The nitrate-nitrogen and un-ionized ammonia levels suggested in Alternative 2 relate to water supply and aquatic life uses and should be further developed in a forthcoming issue paper which will focus on the pesticide and other toxic substances sections of the standards.
- o Further staff work is needed to determine if "trending" standards can be developed to provide additional protection to sensitive and scenic waterways. This work will be addressed in the issue paper discussing anti-degradation.
- o Nuisance conditions due to periphyton and macrophyton growth are not addressed under either standard. The Department feels that the narrative standards are adequate at this time and further research is needed prior to the development of numeric standards for these forms of growth.
- o Several testifiers suggested identifying a key area and conducting a pilot study to test the standards prior to adoption.

PROPOSED DEPARTMENT ACTION

1. The Department concludes that alternative 1 should be modified as suggested during the public hearings and proposed to the Commission for adoption. These modifications specify: different numeric standards for different types of water bodies; collection, analytical and statistical methodology; and wording that clarifies the intent of the standard. The modified Alternative 1 is contained in Attachment A. Rationale for the refinement of the chlorophyll levels is presented in Attachment E. Different chlorophyll levels for different water bodies could account for and reduce the influence of periphyton (attached algae) on a phytoplankton (floating algae) indicator. In addition, the specification of collection methodology and use of averaging methods will reduce some of the variability inherent in chlorophyll measurements. The fact that the numeric limits are somewhat subjective reinforces the specified course of action of further study and should not limit the usefulness of the standard for screening purposes. Further refinements to these levels can occur based on the related studies.
2. The Department concludes that Alternative 2 should not be adopted.
3. A standard such as presented in Alternative 2 can be specified for a given waterbody at a future date based on studies carried out under Alternative 1. Similarly, nutrient waste load allocations can be specified based on waterbody specific data and without the adoption of a nutrient standard. The use of nutrient levels as a screening tool is not diminished by not adopting nutrient standards. The major concern with Alternative 2 is that major costs can be incurred with the possibility of achieving little, if no, environmental benefit. Alternative 1 is a more prudent approach that is based on a better measurement of phytoplankton growth and a course of action that gives better assurance of achieving environmental benefit.
4. The Department feels that Alternative 1 should be tested and will do so over the next year in the Tualatin Basin. The following is a brief description of the study which is underway in the Tualatin Basin.

TUALATIN BASIN STUDY

The Department staff have just initiated an intensive review and study of the water quality and pollution sources in the Tualatin Basin. This study is expected to be complete by December 1987. Water quality has been declining in the Tualatin River over the past several years. Although treatment requirements in the basin are quite stringent, population and industrial growth have resulted in substantial increases in waste loadings. Point source discharges along with non-point contributions from urban and agricultural sources, natural background levels and low summer streamflows have all contributed to the declining water quality. In addition, elevated chlorophyll concentrations in the Tualatin River and complaints of nuisance algal growth in Lake Oswego have led to a concern over nutrient concentrations and loadings in the basin.

Major tasks and completion schedules are presented below. Some of the tasks, particularly review and analysis of existing data, can be completed with existing staff. A grant application for federal 205j funds is now being prepared. If approved by EPA, the grant will provide needed resources to develop and implement an intensive data acquisition, analysis and modeling program and, if needed, to develop pollution control strategies.

TUALATIN PROJECT TASKS:

1. Describe specific water quality issues in the Tualatin Basin. Several concerns have been identified to date. This includes a current assessment of water quality in the drainage, an evaluation of beneficial uses, and a review of point/non-point source pollutant patterns and characteristics. Several water quality parameters of concern include dissolved oxygen, ammonia, algae, nutrients, metals, and trace organics. (Initiated 11/85)
2. Develop an initial inventory of existing ambient and source data. Conduct a preliminary identification of additional information required to address the issues. For example, estimates of seasonal loads contributed from significant tributaries are needed to evaluate nutrient and toxics concerns. (Initiated 12/85)
3. Initiate data gathering to fill the preliminary gaps with supplemental information. (Initiate 1/86)
4. Identify desirable enhanced analytical tools to refine existing data assessment capability. This includes installing several water quality models on the Department's Harris computer system. (Initiate 2/86)
5. Evaluate supplemental data and incorporate additional information not included in the preliminary assessment. Modify and/or expand data collection efforts, if required. (Initiate 4/86)
6. Refine initial data review with enhanced analytical tools. Conduct detailed assessment and modeling. (Initiate 6/86)
7. Complete final Tualatin Basin water quality problem assessment. (Complete 9/87)
8. Identify and evaluate planning options and, if needed, prepare pollution control strategies. (Complete 12/87)

SUMMATION

1. The Commission authorized a hearing to receive testimony on two alternatives for nuisance aquatic growth/nutrient standards on September 27, 1985.

2. Notice of public hearings was published in the Secretary of States' Bulletin on November 1, 1985, and mailed to various Departmental mailing lists.
3. Hearings were held in Portland on November 18, 1985; La Grande on November 25, 1985; and Medford on December 3, 1985. The hearing record closed on December 6, 1985 but all testimony received following this date was accepted.
4. Testimony has been summarized and evaluated. Modifications to Alternative 1 (nuisance aquatic phytoplankton standard) were made. Alternative 2 is recommended for elimination from further consideration at this time. Standards for nitrate-nitrogen, un-ionized ammonia and for "trending" (to protect sensitive and scenic waterways) will be further developed in subsequent issue papers.
5. The recommended revision of alternative 1 is contained in Attachment A.

DIRECTOR'S RECOMMENDATION

Based on the summation, it is recommended that the Commission adopt the revisions of Alternative 1 to OAR Chapter 340-41-150 and direct the Department to make the additional considerations noted above in the preparation of issue papers which may propose rule amendments scheduled for Spring 1986.


Fred Hansen

HR0062
WC108

- Attachments:
- A. Proposed Standard Recommended For EQC Adoption
 - B. Alternative Standards Presented At September 27, 1985 EQC Meeting
 - C. Summary of Hearing Testimony
 - D. Analysis of Hearing Testimony
 - E. Rationale for Chlorophyll a Level and Methodology
 - F. Public Notice of Hearing and Information Report
-- Water Quality Standards For Nutrients

Andy Schaedel
229-5983
1/22/86

Alternative No. 1

STANDARDS APPLICABLE TO ALL BASINS

Nuisance [Aquatic Growths] Phytoplankton Growth

340-41-150 The following standard and implementation program shall be applied to lakes, reservoirs and streams, [to prevent nuisance growths of phytoplankton:] except for ponds and reservoirs less than 10 acres in surface area, marshes, and saline lakes, to identify water bodies where phytoplankton may create a nuisance condition and may affect the recognized beneficial uses:

- (1) No wastes shall be discharged and no activities shall be conducted which will cause [the level of Chlorophyll a in the waters of the state to exceed an average of 0.01 mg/l measured over any 3 consecutive month period] average Chlorophyll a concentrations to exceed the following values:

- (a) Natural lakes which thermally stratify: 0.01 mg/l
- (b) Natural lakes which do not thermally stratify, reservoirs, rivers and estuaries: 0.015 mg/l

Average chlorophyll a concentrations shall be based on the following collection methodology (or other methods approved by the Department): a minimum of three (3) samples collected over any three consecutive months at a minimum of one representative location (e.g., above the deepest point of a lake or reservoir or at a point mid-flow of a river) from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom (the lesser of the two depths). Analytical methods shall be in accordance with the most recent edition of Standard Methods for the Examination of Water and Wastes or methodology approved by the Department.

- (2) Upon determination by the Department that the standard in Paragraph (1) is exceeded, the Department shall:
 - (a) Declare the appropriate stream reach or water body to be in non-attainment with the standard.
 - (b) In accordance with a schedule approved by the Commission, conduct such studies as are necessary to describe present water quality; determine the impacts on beneficial uses; determine the probable causes of the standard violation and beneficial use impact; and develop a proposed control strategy for attaining compliance where technically and economically feasible. Proposed strategies could include [including] standards for additional pollutant parameters, pollutant discharge load limitations, and such other provisions as may be appropriate.

Where natural conditions are responsible for exceedance of the standard in subsection (1) above, or beneficial uses are not impaired, the standard in subsection (1) may be modified to an appropriate level for that water body.

Nuisance Aquatic Growths

January 31, 1986

Page 2

- (c) Conduct necessary public hearings preliminary to adoption of a control strategy and additional standards after obtaining commission authorization;
- (d) Implement the strategy upon adoption by the Commission.

Andy Schaedel:c

WC102

229-5983

January 17, 1986

Alternative No. 1

STANDARDS APPLICABLE TO ALL BASINS

Nuisance Aquatic Growths

340-41-150 The following standard and implementation program shall be applied to lakes, reservoirs and streams to prevent nuisance growths of phytoplankton:

- (1) No wastes shall be discharged and no activities shall be conducted which will cause the level of Chlorophyll a in the waters of the state to exceed an average of 0.01 mg/l measured over any 3 consecutive month period.
- (2) Upon determination by the Department that the standard in Paragraph (1) is exceeded, the Department shall:
 - (a) Declare the appropriate stream reach or water body to be in non-attainment with the standard.
 - (b) In accordance with a schedule approved by the Commission, conduct such studies as are necessary to describe present water quality; determine the impacts on beneficial uses; determine the probable causes of the standard violation and beneficial use impact; and develop a proposed control strategy for attaining compliance including standards for additional pollutant parameters, pollutant discharge load limitations, and such other provisions as may be appropriate;
 - (c) Conduct necessary public hearings preliminary to adoption of a control strategy and additional standards after obtaining commission authorization;
 - (d) Implement the strategy upon adoption by the Commission.

Alternative No. 2

STANDARDS APPLICABLE TO ALL BASINS

Nutrient Standards

340-41-150(1) No wastes shall be discharged and no activities shall be conducted which will cause the average concentrations measured in any three consecutive months (except as noted) for the following nutrients to be exceeded:

- (a) Total phosphorus in lakes-----0.025 mg/l as P
- (b) Total phosphorus in streams entering lakes-----0.05 mg/l as P
- (c) Total phosphorus in other streams-----0.1 mg/l as P
- (d) Nitrate nitrogen, (N)-----10.0 mg/l as N
- (e) Un-ionized ammonia (individual value)-----0.02 mg/l

- (2) Upon determination that any of the above standards are exceeded, the standards shall be considered to be effluent standards for point source discharges to such waters. Permits for such discharges shall be modified to incorporate the appropriate standards together with a schedule for implementation. In addition, best management practices for non-point sources shall be evaluated and revised as necessary to attain compliance with the standards.
- (3) Where ambient levels of these nutrients are not exceeded, increments allocated to any new or expanded source shall not exceed 10% of the difference between the ambient level and the standard.
- (4) The standards and implementation program set forth in Paragraphs (1), (2), and (3) above shall be considered interim standards until replaced by specific standards for individual stream reaches or water bodies.

Andy Schaedel:c
WC99
229-5983
January 16, 1986

SUMMARY OF HEARING TESTIMONY

On September 27, 1985, the EQC authorized the Department to hold public hearings to receive further testimony on two proposed options which address nuisance aquatic growth and nutrient standards.

Public notice of the hearings was given by publication in the Secretary of State's Bulletin on November 1, 1985 and by mailing using various Department's mailing lists.

Three public hearings were scheduled and held as follows:

City	Date	Time	Location
Portland	November 18, 1985	1:30 p.m.	Commission Room, Dept of Fish & Wildlife 506 SW Mill St
La Grande	November 25, 1985	7 p.m.	Room 309, Hoke Eastern Oregon State College
Medford	December 3, 1985	1:30 p.m.	Jackson County Courthouse 8th and Main

Tom Lucas (Portland) and Krystyna Wolniakowski (La Grande and Medford) served as Hearings Officers and Andy Schaedel was the technical staff member. The format for each hearing was as follows:

1. Introductory remarks and hearing protocol by hearings officer.
2. Brief discussion of the proposed standards by the technical staff member followed by a question and answer session.
3. Receipt of formal testimony (tape recorded).

The record remained open for receipt of written testimony until 5:00 p.m. December 6, 1985.

The summary of testimony is organized as follows:

- A. Index to the testimony
- B. Summary of oral and written testimony

Nutrient Hearing Summary

January 31, 1986

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A. Index of Testimony

<u>No.</u>	<u>Organization/Testifier</u>	<u>Oral</u>	<u>Written</u>
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2.	Ashland, City of/A Alsing	0-19	A-39
3	Baker Valley Irrigation Dist/ G Chandler		A-11
4	Beaverton, City of/L Cole		A-22
5	Clackamas County/B Erickson		A-21
5	/D Abrahms	0-13	
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5	/D Holmes (CH2M-Hill)	0-13	
6	Collier, R		A-8
7	Corvallis, City of/K Brough		A-34
8a	Eugene, City of/C Andersen		A-32
8b	Springfield, City of/M Kelly		A-33
9	Forest Grove, City of/I Burnett		A-14
10	Grants Pass, City of/D Wheaton	0-21	
11	Griffiths, R		A-9
12	Hillsboro, City of/R Gibson		A-19
13	Hughes, B		A-30
14	Jackson Co SWCD/J Parsons	0-14	A-12
15	Klamath Falls, City of/K Carlson (Beak Cons)		A-27
16	Lake Oswego Corp/J Smith	0-10	
16	/G Achterman	0-10	
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18	Lane County/R Burns		A-7
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B. Summary of Testimony

1. ASSOCIATED OREGON INDUSTRIES; Tom Donaca, General Counsel; Oral Testimony (0-11, Portland)

Opposes adoption of both alternatives as presented. Believes that the regulations are premature and the facts are not present to justify the standards suggested. More work on appropriate standards is needed. Recommended that a fiscal impact analysis be conducted on both options to determine costs involved and that federal funding should be pursued.

2. CITY OF ASHLAND; Al Alsing, Director of Public Works; Written (A-39) and Oral Testimony (0-19, Medford)

Opposed to both alternatives presented and recommends that no action be taken at this time. Expressed concern that there are higher priority problems than nutrients in Bear Creek and it would be unwise to commit money to this effort. Recommended that if Lake Oswego has problems with nutrients, that a special study be conducted for them and that state money should not be used to for the study. Bear Creek Valley has an active Water Quality Committee and they have not received complaints or criticisms on the nutrient problems in Bear Creek.

3. BAKER VALLEY IRRIGATION DISTRICT; George Chandler, Chairman; Written Testimony (A11)

Opposed to both alternatives and expressed concern that any regulation would affect irrigation practices and create an economic burden that could devastate an already stressed industry. BVID feels that maintaining and improving the water quality of the Powder River is important and will continue to do what is necessary.

4. CITY OF BEAVERTON; Larry D. Cole, Mayor; Written Testimony (A22)

Submitted a resolution opposing both alternatives. Additional costs would impact citizens of Beaverton through increased service fees to customers of USA (initial estimates of 116-175% increase) and for treatment of storm water drainage. Even if addition sewage and storm water treatment were performed, nuisance aquatic growth would likely occur due to natural source and unregulated non-point sources.

5. CLACKAMAS COUNTY; Bruce W Erickson, Project Manager, Department of Utilities, Written Testimony (A21); Dave Abraham, Director, Dept of Utilities; G. Graham and D. Holmes, CH2M-Hill, Oral Testimony (O-13, Portland)

Oppose both alternatives as not addressing the complexity of the issue and having enormous adverse fiscal and economic impact. Alternative 2 is categorically unacceptable. The intent of Alternative 1 has some merit but the chlorophyll level at 0.01 mg/l is questionable. The wording of Alternative appears to be inappropriate in that it states "No wastes shall be discharged and no activities shall be conducted which will cause..." although the intent appears to be to initiate a study when the standard is violated. Other concerns were:

- o Chlorophyll in rivers may not reflect potential nutrient loading problems but reflect the chlorophyll from attached growth or input from lakes and reservoirs. A variety of factors in addition to nutrients will influence algal growth thus affecting the validity of chlorophyll as an indication of nutrient loading problems. Chlorophyll does not directly relate to the "well being" of aquatic life which standards are designed to protect nor does it relate to oxygen deficits in flowing, well mixed rivers.
- o The chlorophyll standard does not distinguish nuisance algal species. It is unclear who or how a nuisance condition would be defined. Nutrient standards would have little affect on rooted plant growth. High nitrogen and phosphorus levels may not indicate conditions conducive to nuisance aquatic growth when other factors may be limiting.
- o Non-point and natural sources are a major contributor of phosphorus. The phosphorus standard is only meaningful if there are practical ways to control non-point nutrient sources.
- o To adequately track phytoplankton productivity in Oregon's waters would require an increased monitoring effort by DEQ at great expense with little gain.
- o Nutrient removal to the levels suggested in alternative 2 at the Kellogg and Tri-City plants would be of limited benefit to the Willamette River with a great cost. Using existing data, a 1.8% decrease from 0.103 mg/l to 0.99 mg/l in summer average phosphorus values would be observed. Estimated costs would be as follows:

	Capital Cost	O & M Cost	Current Charge	Added Charge	% Increase
Kellogg	\$20,000,000	\$68,000/mo	\$7	\$9	130
Tri-City	\$17,000,000	\$56,000/mo	\$7	\$12	170

6. Dr. Robert Collier; Asst Prof College of Oceanography Oregon State University; Written Testimony (A8)

Supports Alternative 1 based on our inability to relate nutrient concentrations to algal growth responses. This alternative provides flexibility for specific studies to prevent inappropriate or ineffective responses to non-attainment. Noted that many high Cascades lakes are N-limited rather than P-limited and that N levels in Alternative 2 would result in significant algal growth. Other comments were:

- o General language in standards that cover nuisance conditions should be preserved since periphyton growth can be significant and is not covered by proposed alternatives.
- o Strongly supports 3-month average instead of an annual mean based on the dramatically seasonal hydrologic cycle.

7. CITY OF CORVALLIS; Kerry J Brough, Operation Services Manager; Written Testimony (A34)

Favor Alternative 1 as a more practical and fair means of addressing excessive algal growth.. Comments include:

- o Capital and operating costs for tertiary treatment plants would be a staggering burden to municipalities at a time when cities are struggling to fund essential services. Preliminary cost estimates for phosphorus removal for Corvallis are: \$1.5 million for construction and \$300,000/year for operation. The increased operating costs represent a 40% of the current operating costs. It would be unfair to automatically impose these costs when there is no universal relationship between nutrient levels and algal growth.
- o Before solving a problem, it must be investigated to determine the cause and source of the problem so that the sources can be regulated in order to solve the problem. Alternative 1 contains the elements necessary for dealing with non-attainment of a standard. If the chlorophyll standard were exceeded but the quality of the receiving water were not degraded, unnecessary expense could be avoided.

- 8a. CITY OF EUGENE; Christine F. Andersen, Director of Public Works; Written Testimony (A32)

- 8b. CITY OF SPRINGFIELD; Michael A. Kelly, Director, OCED; Written Testimony (A33)

Opposes the second alternative but supports the first alternative provided that control strategies address non-point sources and cost/benefit on a case by case basis. Specific concerns include:

- o The economic impact of financing nutrient removal from point source discharges creating a tremendous public burden. If imposed without suitable study, benefits may be negligible and costs are high.
- o Non-point sources such as from agriculture; rivers in California with nutrient control on all point sources still suffer problems due to agricultural runoff.

9. CITY OF FOREST GROVE; I.M. Burnett, City Recorder; Written Testimony (A14)

Submitted a Resolution (No 85-55) opposing both alternatives as being expensive and ineffective in improving water quality. Specific concerns were:

- o The City would realize increased costs due to sewage treatment performed by USA and treatment of storm drainage to remove nutrients. Nuisance aquatic growth may still occur due to availability of nutrients from natural sources and unregulated non-point sources.

10. CITY OF GRANTS PASS; David Wheaton, Utilities Superintendent; Oral Testimony (O-21, Medford).

Expressed concern on the costs of redesigning the Grants Pass wastewater facilities to meet the proposed standards, since all the money spent on the current facility designs would be wasted if target phosphorus levels were changed.

11. Dr Robert Griffiths, Assistant Professor, Dept of Microbiology, Oregon State University; Written Testimony (A9)

Supports alternative 1 since alternative 2 would be too restrictive and potentially too costly. Expressed the following concerns:

- o Alternative 2 is impractical since there is no universal relationship between nutrient levels and aquatic growth and the problem being addressed is defined using subjective criteria.
- o Alternative 2 will lock DEQ into extensive and costly monitoring that will have limited use in addressing statewide water quality problems. Given limited resources, toxic wastes in aquatic systems need to be addressed before a large allocation of resources is devoted to nutrients.

12. CITY OF HILLSBORO; Roy F. Gibson, City Engineer; Written Testimony (A19)

Opposes both alternatives since adoption of standards may not result in solving nuisance aquatic growths. Natural runoff could maintain nuisance conditions. The sanitary sewer user would be significantly impacted by high costs due to additional treatment requirements necessary to gain compliance with the standards. The problem and solutions should be investigated more thoroughly prior to adoption of standards.

13. Dr Robert M Hughes; Written Testimony (A30)

Agrees with need for nutrient/chlorophyll standards but suggests using a regionalization (ecoregion) approach in which the background levels for these parameters could become the regional standard. Existing data and selected additional monitoring that would build upon the cooperative regionalization project currently initiated between USEPA and DEQ could be used to develop the background standard. Specific comments and concerns about the proposed standards were:

- o It is impossible and undesirable to have all waters free of nutrients. All waters contain some form of algae with densities varying due to natural and human related causes. The eutrophication of water is a natural process.
- o Case by case studies are laudable, but in reality, very few are carried out due to lack of funding, political pressures, and difficulty in conducting the studies due to a variety of factors. The emphasis on local conditions tends to ignore regional patterns and may create more management problems than are resolved.
- o There is too little discussion of non-point sources of pollution in both the USEPA "Redbook" and Oregon's current and proposed standards. These are major contributors of nutrients. Perhaps nutrient/chlorophyll standards would serve as a foundation for a more proactive program to control non-point sources.
- o The standards do not address periphyton or macrophyton which may be a greater problem in many parts of the state.
- o Chlorophyll a concentrations are affected by turbidity and residence time. Without controls on these variables, some local entity could add clay to their effluent or buy water rights to increase dilution.
- o Current criteria for un-ionized ammonia should be incorporated.
- o Allowing a 10% increment for new or expanded sources violates USEPA antidegradation policy (Fed Reg 1983. 48 (217):51402-51403).

- o Some consideration should be given for nutrient loadings (vs concentrations) to lakes. Nutrient concentrations may be quite low during most of the year but increase several orders of magnitude during high runoff.

14. JACKSON SOIL AND WATER CONSERVATION DISTRICT; Judson Parsons, Director
Oral(0-14, Medford) and Written Testimony (A12)

Recommended that NO action be taken at this time because nutrients in Bear Creek were not the primary problem and did not warrant expenditure of public dollars at this time. Lack of water during the summer low flows and the presence of coliform bacteria were the most important priorities. Explained that water in Bear Creek during the summer was all irrigation return flows and until additional good quality water was available from Lost Creek, nutrient standards on the present flow would serve no beneficial purpose since irrigation flow was better than no flow. The District is committed to improving and maintaining good water quality and is active in irrigation runoff control, and will support alternative #1, chlorophyll standards, only after supplemental water is available for Bear Creek.

15. CITY OF KLAMATH FALLS; Ken L. Carlson, Water Quality Specialist, Beak Consultants Inc; Written Testimony (A27)

Opposed to both alternatives based on numerous technical/scientific concerns over the soundness, applicability and enforceability of the alternatives as proposed. Major concerns were:

- o The relationship of chlorophyll a concentration to concurrent and discrete nutrient concentration is not well defined. Factors such as light, phosphorus, nitrogen, micronutrients and invertebrate grazing influence biomass making it a highly dynamic system. This causes a highly variable system (spatially and temporally) requiring an intensive sampling program.
- o Chlorophyll a in streams is concentrated in periphyton which the standards do not address. In slow moving rivers, light would generally be limiting to algal growth. Research has been unable to establish what a nuisance level of periphyton growth would be or a clear correlation with nutrient concentrations and periphyton biomass. A variety of factors influence its growth
- o Complexity of stream environments requires that DEQ specifies how, when and where samples are to be collected.

- o There are many problems with a single numeric phosphorus standard as proposed in alternative 2. Trophic states of lakes are best predicted by areal loading of phosphorus using the morphology and hydrology data from the lake.

16. LAKE OSWEGO CORPORATION; Gail Achterman, Attorney and Jack Smith, Consultant; Oral Testimony (0-10, Portland)

Supports the adoption of alternatives #1 and #2 together. Each adopted separately would be inadequate. The following rationale was used to support the options presented:

- o Alternative #1 establishes a criterion to measure algal growth in waterbodies and waterways, and if levels exceeded, then special studies would be initiated.
- o Alternative #2 provides numerical standards to be used immediately for point source and non-point source compliance determination. However, this option does not consider other environmental factors in waterbodies that would be addressed in #1 using a chlorophyll a standard.
- o Immediate problems exist with high nutrient loadings and algal growth in Lake Oswego. A correlation definitely exists between the nutrient loadings in the Tualatin River and nuisance aquatic growths.
- o As a matter of law, DEQ is required to adopt standards necessary to restore and maintain the chemical, physical, and biological integrity of Oregon's waters. Statutory obligation would be fulfilled with adoption of the nutrient standards, and would provide a target to aim for.
- o Many states have already adopted nutrient standards that follow the EPA Red Book criteria (15 states and 4 provinces). The Red Book criteria are based on eutrophication studies conducted in many states for flowing waters, impounded waters, and streams flowing into impounded waters. These criteria would be useful and applicable to Oregon waters as well, unless some unique circumstances exist in the state.
- o Emphasized that adoption of standards would not place the entire burden of compliance on the wastewater treatment plants, but implementation and enforcement will cost some money. Clean water is the policy of the state and the country through the Cleanwater Act, and all beneficial uses must be protected.

17. CITY OF LAKE OSWEGO; Peter Harvey, City Manager; Written Testimony (A6); P. Hains, Oral Testimony (0-8, Portland)

Opposes both standards as being expensive and ineffective in improving water quality. Feels EQC should direct resources where most needed to protect for health and safety. Standards do not properly identify or correct problem. Blanket nutrient standards would cripple citizens of Oregon and would have no significant effect in most cases.

18. LANE COUNTY; Roy Burns, Manager of Land Management Division; Written Testimony (A7)

Suggests combining both chlorophyll a and nutrient levels as a trigger for some appropriate remedial action and a significant increasing trend in these levels as a trigger for a protective response. Wording should be added to provide for specific standards to be adopted in special cases. Particular concerns were:

- o The adoption of one of the alternatives would limit DEQ's ability to address the risk to a water body from nutrients and algal growth.
- o A chlorophyll standard would cause a response only after algal changes occur whereas changes might be better anticipated if nutrients are monitored.
- o By addressing an increasing trend, a response could be made before the problem occurs which is preferable to fixing a problem that has occurred.
- o A statement should be added to provide for specific standards that would better address waters that are naturally high in nutrients and algal growth, and to protect pristine waters with low levels of nutrients and algal growth such as a pristine water supply.

19. MALHEUR COUNTY FARM BUREAU; Barry Futishin; Written Testimony (A10)

Recommends no action at this time. Narrative criteria currently in use with the support of relevant sampling and statistic tests when a problem is clearly present is working reasonably well. The 'state of the art' criteria for setting standards does not seem well enough refined to properly address the range of local situations in the state. Specific concerns were:

- o There is not a clear relationship established between the proposed statistical parameters and environmental benefit.

- o There is no discussion of the administrative costs of the proposals as well as the economic costs to industry of implementing the alternatives. Similiar parameters in the State of California caused in the temporary closure of an irrigation district resulting a considerable economic loss.
- o There is insufficient discussion of the degree to which natural circumstances may contribute to non-compliance or make compliance impossible.
- o There is no discussion of how non-point sources might be determined or controlled in alternative 2.
- o The statement that 58 sites of over 100 analyzed would be in non-compliance indicates that either the standards are suspect of the problem is so widespread that enforcement would be expensive and probably impossible.
- o Many of the waterways in the Ontario area would not meet the standards due to the impact of irrigation return waters. However, the irrigation practices in operation for approximately 50 years have resulted in providing habitat for fish and wildlife species that would not have been suited for the area prior to irrigation. In most cases, the current situation is considered the norm and standard.

20. CITY OF MEDFORD Walt Meyer, Brown and Caldwell Engineers; Oral Testimony (0-18, Medford)

Supported adoption of alternative #1 Chlorophyll because it utilized a scientific method of problem definition, development and assessment of alternatives, with adoption of a solution that best fits the problem. Recommended separate standards for lakes and rivers, and a basin-wide approach to assessing receiving water problems. Chlorophyll values should be less stringent in streams than lakes, and should be tailored to a specific body of water.

Opposed adoption of alternative 2 (P values) because of large monetary expenditures for very little environmental benefit. Treatment technology is not available to remove the phosphorus to the proposed values. Standard may not be obtainable because of naturally high background levels. Also emphasized that nutrient concentrations do not always produce nuisance aquatic growth. Estimated that an additional \$500,000 per year would be necessary to achieve standard levels which would come from increasing user fees. Communities cannot afford these rate increases.

- 21a. NORTHWEST ENVIRONMENTAL DEFENSE CENTER; Cyndy Mackey Oral (0-09, Portland) and M. Holt Written Testimony (A28)

Supports adoption of both alternatives #1 and #2 together. Alternative #2 provides a numerical evaluation criteria that is enforceable and provides dischargers with a framework for compliance. Both non-point and point sources are addressed with this option and should be adopted immediately. If nutrient standards are violated, then use of alternative #1 would provide a mechanism to initiate site specific studies. In addition, an amendment to the current temperature standard was suggested.

- 21b. SIERRA CLUB, NEDC; Mary Gray Holt, attorney, Jolles, Sokol, and Berstein; Written Testimony (A28)

Support adoption of nutrient standards and emphasize that the standards should apply to all lakes, reservoirs, estuaries and streams of Oregon. Also urged adoption of an amendment to the temperature standards.

22. OREGON DEPARTMENT OF FISH AND WILDLIFE; Louis C. Fredd, Water Resource Coordinator, Env. Management Section; Written Testimony (A20)

Expressed concern about the potential fiscal impact to the State of Oregon to upgrade fish hatchery treatment facilities to meet the nutrient standards. The State has spent over \$5,000,000 to meet the suspended solids limitations under the current general water discharge permits at 34 hatcheries statewide. Using the DEQ preliminary analysis indicating that 37 stream segments which would exceed the nutrient standards, 13 hatcheries are located upstream and 3 hatcheries are located downstream of these segments. Additional state and federal funding may be required to upgrade these facilities depending upon which alternative is chosen.

23. OREGON DEPT OF TRANSPORTATION, PARKS AND RECREATION DIVISION; John E. Lilly, Assistant Administrator; Written Testimony (A38)

Finds Alternative #1 more desirable, likely to be economical and provide reasonable assurance that controls will achieve the environmental benefit. Expressed the following concerns:

- o None of the options address rooted aquatic plant growth
- o Proposal should not weaken current water quality standards affecting hydroelectric facility siting.

- o Would like to see river segments and lakes designated as scenic waterways receive special consideration for maintaining water quality by applying more stringent anti-degradation standards.

24. OREGON ENVIRONMENTAL COUNCIL; John A Charles, Executive Director; Written Testimony (A36)

Supports adoption of both alternatives. Alternative #1 is a mechanism for correcting problems after they arise and alternative #2 provides a preventive approach. Together they would give DEQ the management tools necessary to control nutrient loadings and would be a basis for setting Total Maximum Daily Loadings (TMDL) and NPDES permit levels. The adoption and implementation of standards will cost money but may have the hidden benefit of causing innovative thinking by dischargers to develop alternative and more cost-effective ways of managing wastes. The standards will fit into the Department's efforts to reassess the entire non-point source program and should eventually take some regulatory burden off point sources through stricter controls of non-point sources.

25. OREGON SHORES CONSERVATION COALITION; John W Broome, Director; Written Testimony (A15)

Support both alternatives with alternative 1 providing for more intensive study and corrective strategy development necessary should implementation of standards in alternative 2 be insufficient to prevent water quality problems. Specific comments included:

- o Alternative 1 will provide a useful screening parameter to identify waters experiencing nuisance aquatic growth. However, it is flawed in that the strategy is corrective rather than preventive as action is triggered after problems have occurred.
- o Alternative 2 provides the basis for a preventive strategy. The standards allow the establishment of site specific maximum allowable loadings for nutrients which would be the basis of such activities as NPDES permits, non-point source programs, etc.
- o Site specific nutrient standards could be further refined for thermally stratified lakes and reservoirs by using the Vollenweider-Rast and Lee phosphorus loading model and data in the "Atlas of Oregon Lakes."
- o Oregon Shores agrees that the fiscal and economic impact of nutrient standards could be large and far-reaching but this impact may not necessarily be negative. Cost-effective and environmentally appropriate land treatment systems could be used rather than expensive and energy intensive tertiary treatment plants. Greater efforts would be made to control non-point sources of pollution rather than the present policy of placing the burden on regulated point sources. In short, nutrient standards will translate to a need for DEQ to develop and implement effective water quality management and planning programs which do not presently exist.

26. OREGON TROUT; B. M. Bakke, Executive Director; Written Testimony (A25)

Supports both alternatives due to concern that nutrient loads cause degradation in quality that directly affects valuable salmonid resources and their survival. In addition, algal growth affects fishing by fouling gear and degrading the angling experience. Requests the Department to develop and implement a program to manage nutrient loading from point and non-point sources.

27a. OREGONIANS FOR FOOD AND SHELTER; David H. Dietz, Program Director; Written Testimony (A40)

27b. OREGON WHEAT; Wesley Grilley, Executive Vice President; Written Testimony (A41)

27c. OREGON FOREST INDUSTRIES COUNCIL; Rick Schack, Forst Resources Director; Written Testimony (A42)

Opposes alternative 2 and gives qualified support to Alternative 1 but suggests that adoption of this alternative be postponed until facts justify the need for the standard. The qualified support depends on the type of site specific review process favoring one that concentrates on a benefit versus control strategy analysis. Specific concerns include:

- o Establishing strict loading limits (alternative 2) is inappropriate at this time due to lack of site specific data and basic scientific knowledge. Strict limits that affect non-point source pollutants would chill the ability of agriculture, timber and business to develop and/or progress.
- o Available data suggests that nutrient loading is not a significant factor affecting Oregon's water quality. Many members of the agricultural, timber and business community view the rush to regulate as another indication that Oregon is not open to business.

28. CITY OF PORTLAND; John Lang, Administrator, Bureau of Environmental Services & Dr. Denny S. Parker, Brown and Caldwell, Consulting Engineers; Oral (O-12, Portland) and Written Testimony (A35)

Oppose both alternatives as being inappropriate, costly and ineffective in many river situations. Suggest further refinement of alternative 1 and to reject alternative 2. Specific concerns include:

- o Alternative 1 needs a range of chlorophyll for different water bodies and a procedure for establishing nuisance conditions. Examples of different "nuisance" levels determined by user responses and approaches for establishing specific target values were cited. Otherwise, alternative 1 consists of a logical series of steps to assess whether a problem exists and to develop a control strategy.

- o Alternative 2 does not involve standard scientific methods to define and solve problems or base regulatory action on real problems. Elevated phosphorus levels do not mean that aquatic growths are a problem nor do values below the standard ensure the absence of nuisance growth. "Redbook" phosphorus values represent a set of average conditions but consideration of specific situations is required.
- o Uniform application of a single criteria will lead to unnecessary expenditures for Advance Waste Treatment (AWT). The phosphorus concentrations suggested are not routinely achieved by AWT on a long term basis. There are at least 4 systems that average in the range of 0.1-0.3 mg/l using two stage phosphorus removal. Each produces large amounts of sludge which may also be difficult to compost. In many cases, AWT operations have been mothballed after considerable expense because they had no measureable environmental benefit.
- o Estimated costs for the City of Portland to implement phosphorus removal would minimally be expected to increase by \$10,200,000 per year for amortization of capital and operations and maintenance. Costs to city customers (single family dwelling unit) would minimally rise 50% from \$6.90/mo to \$10.25/mo.
- o More recent un-ionized ammonia criteria (such as suggested by Szumski) should be investigated.

29. PORTLAND GENERAL ELECTRIC COMPANY; Dr Lolita Carter; Oral (0-6,Portland) and Written Testimony (A4)

Opposes both alternatives at this time due to too many unanswered questions about how the standards are to be applied, the economic and environmental costs, and the validity of the numerical concentrations proposed. Specific concerns included:

- o Whether a single chlorophyll a concentration is appropriate for Oregon - Eastern Oregon rivers and lakes are often more productive based on climate and other environmental factors. Noted that the Columbia River has exceeded the standard since 1974 when PGE began collecting samples.
- o Hydropower, recreation, fisheries, irrigation, flood control, municipal and industrial water uses could be negatively impacted by a nutrient standard. Specifically, physical changes brought about by damming can induce algal growth without further nutrient addition due to increased solar insolation and temperatures. The chlorophyll level of 0.01 mg/l is too conservative for impoundments. Controlling algal productivity is difficult and in many cases is not needed or desired.

- o The low nutrient standards may reduce productivity and ultimately limit food for anadromous and resident fish.
- o PGE is concerned about increased usage of chemicals to control biological productivity in order to meet the standard. These chemicals may affect other aquatic life in addition to algae.
- o Expressed fiscal concerns ranging from the costs for sampling, conducting further studies, and fines for non-compliance which would affect PGE and its customers.
- o Concerned about the scientific basis for the standards. Sampling, lab analysis, and quality assurance methodology not specified. The nitrate nitrogen standard is over 30 times that needed to support an algal bloom. Extensive scientific work on nutrient availability has been conducted over the last 10 years but none of these studies were cited by DEQ. The phosphate-phosphorus standard is inappropriate due to nutrient recycling, natural sources and non-point sources.

30. ROGUE VALLEY COUNCIL OF GOVERNMENTS Eric Dittmer, Water Quality Coordinator; Oral (0-16, Medford) and Written Testimony (A13)

Recommended against adopting any standards at the present time. Expressed concerns about the following issues:

- o Sediment and bacteria problems in Bear Creek are the highest priority, and setting nutrient standards is premature at this time.
- o Most of the nutrient sources originate from non-point sources such as agricultural practices and subsurface septic systems. Impractical to determine the source and extent of nutrient enrichment much less to attempt regulation. Identified that even background levels of nutrients can cause blooms of algae, and that the concentration of nutrients and nuisance growth are not always easily predicted.
- o Since funding is insufficient to address current health hazards, expressed concern about where the resources would come from for a statewide nutrient control program. Suggested identifying a key study area to conduct a pilot test to apply nutrient standards and evaluate the results.
- o If a standard must be adopted, then alternative #1 Chlorophyll should be selected to provide more opportunity for research in a local area.

31. CITY OF SALEM; Sue Harris, Mayor; Written Testimony (A23)

Opposes both alternatives expressing economic concerns that the cost for further wastewater treatment would affect the ability of the food processing industry (Salem's largest industry) to compete in the national and international marketplace. Additional water quality standards could create a severe economic impact. While the City of Salem supports the concept of excellent water quality in the Willamette River and has benefited from the clean up, technical information suggests control of nutrients in the Willamette River offers the potential of few water quality benefits and the possibility of extremely high costs. U.S. Geological Survey (early 1970's study) concluded that no algae problem existed in the Willamette River and, if a problem developed, it could not be controlled by regulating municipal treatment plants. The costs far outweigh the benefits for nutrient standards.

32. SCIENTIFIC RESOURCES INC. N. Stan Geiger, President; Oral (0-7, Portland) and Written Testimony (A26)

Opposes the adoption of both alternatives 1 and 2, and recommends that no action be taken at this time. Believes that the standards are premature, not based on the most recently available scientific information for Northwest waterbodies or most recent EPA eutrophication information. Expressed concerns that if chlorophyll is based on a three month summer average, how would these values be measured, where and how often should sampling occur since variability exists in sampling locations, frequency and types of instruments used for conducting the analyses.

Suggested that DEQ eliminate setting any more standards until more scientific investigations are conducted on nutrient loading rates, limiting nutrients, and specific sampling is conducted in special study areas to screen for problems in waterbodies.

33. SIERRA CLUB, ROGUE GROUP; Joe Knotts, Chair; Written Testimony (A31)

Supports concept of nutrient standards on a site specific basis (eg Lake Oswego) but questions the need for statewide standards at this time. Strongly urges the adoption in a more prudent and timely fashion. Specific concerns include:

- o Rivers are different from lakes. Different criteria and priorities need to be set for each.
- o Other problems such as addressing bacteria and sedimentation are of a higher priority.

- o How will the nutrient data base be established and how will non-point sources be addressed?

34. MARK SYTSMA Aquatic Biologist, Oral Testimony (0-15, Medford)

Opposed alternative #1 Chlorophyll standard and recommended adoption of alternative #2 numerical P standards for flowing waters, and areal loading rates for lakes, for the following reasons:

- o Chlorophyll values vary in lakes, rivers and streams by location and time of year and do not necessarily reflect the level of nutrients present in the water. Too difficult to enforce as a standard.
- o Numerical P standards would be easier to apply in flowing waters.
- o Separate standards should be created for lakes and rivers.
- o Areal loading rates of P should be calculated for lakes using hydrologic and morphometric information. Samples should be collected before stratification occurs in the spring months, and the state should designate exactly how, when and where the samples be collected and analyzed.

35a. TUALATIN VALLEY IRRIGATION DISTRICT Remi Coussens, Chairman; Oral Testimony (0-2, Portland)

Expressed general concerns about water quality standards and emphasized that the agricultural community needed to be consulted before any standards or regulations were developed.

35b. TUALATIN VALLEY IRRIGATION DISTRICT; Palmer Torvin; Oral (0-1, Portland) & Written Testimony (A1)

Expressed general concern about standards and how they could affect the 370 farms which are provided water from the TVID in the Tualatin Basin. Costs and benefits of the Tualatin Project 1 (Hagg Lake), nuisance conditions in the Tualatin River prior to the project, lack of observable irrigation return flow and current debris problems in upper portions of the river were identified as problems.

36. CITY OF TUALATIN; Michael McKillip, City Engineer; Oral (0-4, Portland) & Written Testimony (A-5, A-16)

Expressed concern about the potential fiscal impact of nutrient standards and suggested that no action be taken. Specific concerns were:

- o No scientific evidence is presented that would indicate a need for nutrient standards.
- o Fiscal impact of the standards is unknown. Sewage treatment costs can be calculated but costs due to the loss of future development and opportunities due to uncertainty of treatment costs and availability cannot be evaluated. Fiscal impact of treating storm drainage would be unimaginable.
- o No action should be taken until scientific evidence is documented and presented that indicates the removal of nutrients from the Tualatin River would solve the algae problem in Lake Oswego. This would remove any potential cloud over development in the City of Tualatin and Washington Co and not spend limited public funds to possibly improve aesthetic conditions of Lake Oswego.

37a. UNIFIED SEWERAGE AGENCY Gary F. Kraemer, General Manager; Oral (O-3, Portland) and Written Testimony (A-29) and Loretta S. Skurdahl, Assistant County Counsel; Oral (O-3, Portland) and Written Testimony (A-24)

Opposes the adoption of both alternatives #1 and #2. Believes that the proposed standards are premature, inappropriate, ineffective, and would result in unacceptably high costs for both USA and its customers. The following rationale was provided to support their opposition to the standards:

- o USA is a County Service District that provides sanitary sewerage services to Washington County, western Multnomah County and Clackamas County in the Tualatin River watershed, and discharges treated effluent to the Tualatin River. It has a commitment to good water quality, extensively monitors its effluent for nutrient levels and has experience with techniques and costs of nutrient removal.
- o Believe that standards are PREMATURE because sufficient data do not exist to develop valid standards. From extensive analysis of the most recent studies conducted, it is not clear that that a particular phosphorus concentration results in a predictable chlorophyll concentration, nor that a given phosphorus reduction will lead to a known decrease in algal standing crop. The predictive models proposed are not precise enough and current knowledge in eutrophication processes is not sufficient to allow development of a single standard for all water bodies.

- o Standards proposed are also INAPPROPRIATE because they are directed at a poorly defined problem, they do not regulate the factors responsible for the problem, and they place the greatest burden of compliance on the source least responsible for the problem. Municipal source discharges only affect 6.7% of the nations waters, whereas nutrients from non-point sources affect over 40% of the nations waters, and are the most difficult to regulate with standards. A 3-month average chlorophyll standard does not accurately define nuisance algal conditions since blooms occur intermittently. Nuisance algae blooms are more of an aesthetics problem and may interfere with recreational use occasionally, but "nuisance" conditions are subjective judgements and are not considered or stated as a high priority among all competing water quality goals and public funding goals. In addition, according to all the Oregon lakes literature, nuisance aquatic macrophyte growth is more of a problem than nuisance algae, but cannot be measured or controlled using the chlorophyll standard.
- o Standards proposed would be INEFFECTIVE in preserving and protecting the waters of the state because meeting the standards would not guarantee improved water quality conditions through reduced algal growth. Regulating municipal and other point source discharges would not significantly reduce nutrient sources compared to the effects of non-point sources. Although USA does contribute nutrients to the Tualatin which flows into Lake Oswego, the discharge does not lead to severe degradation in water quality and is not the sole source of algae problems. According to monitoring information available, if USA effluent was removed from the Tualatin River, enough nutrient input exists from non-point sources to maintain the lake in a eutrophic state. The phosphorus levels from monitoring data show that other sources of phosphorus exist other than effluent. Lake Oswego is part of a watershed that contributes significant nutrients from surface runoff and groundwater flows.
- o Standards proposed would result in UNACCEPTABLE COSTS. The alternatives available to reduce the phosphorus levels in the effluent to proposed levels would require 1) upgrade of treatment capability; 2) removal of effluent during low flows through increased holding capacity; 3) discharge to Willamette or Columbia; 4) increase dilution flow through construction of dams or pumping of Columbia or Willamette water. A detailed cost analysis of alternatives showed each one to cost between 75 to 200 million dollars which would significantly increase rate payer costs. None of the options are desirable, some infeasible, and all too expensive, without assured improvement of Tualatin River water quality. By statutory requirement (ORS 468.735(1)(h)), EQC must consider costs to local governments and public

when adopting water quality standards. Further, ORS 468.715(2)(b) directs DEQ to require use of all "available and reasonable methods" to achieve standards set by EQC. Alternative #2 may violate the statute when the nutrient concentration of the water body exceeds standards dictating that the effluent standards be set for the same in the discharge permit. This process does not allow for an evaluation of treatment technology and its cost so the permittee can achieve the permit limitations using "available and reasonable methods".

Alternative #1 provides for specific studies and may allow for fairer allocation of costs among the nutrient source contributors but may in the long run be as costly to implement. And finally, the proposed options would make planning for new treatment facilities more difficult because of the uncertainty in costs associated with achieving the proposed standard levels in specific water bodies. At this time, there is insufficient data to indicate that the massive expenditure of public funds to add further treatment to sewage effluent would produce compliance with the proposed chlorophyll and phosphorus standards in the Tualatin.

- o IN SUMMARY, statutory authority already exists to permit regulation of individual water bodies or polluters where problems exist. USA recommends that specific problem areas be treated on an individual basis which can be accomplished under the present regulations. If a specific standard is necessary, than a similar standard approach as in Alternative #1 should be adopted where local citizens or resource users can trigger a site specific investigation to develop appropriate control and restoration measures. DEQ could develop a list of priority waterbodies using a rating scheme that would be responsive to a variety of problems and would avoid commitment of limited resources to meet arbitrary standards where no real problem or benefit exists. For a complex system like Lake Oswego, USA suggests that DEQ and Lake Oswego Corporation cooperate in a thorough monitoring study to assess the magnitude of the problem, and identify all the nutrient sources and environmental factors that may contribute to the algae blooms in Lake Oswego.

37b. UNIFIED SEWERAGE AGENCY OF WASHINGTON COUNTY Stanton Le Sieur, Assistant General Manager; Oral Testimony (0-17, Medford; 0-22, La Grande)

Opposed the options presented and recommended no action be taken at this time. Expressed concern that the proposed standards would affect many people in the irrigation districts, stormwater management, agricultural and wastewater dischargers. Other health related problems were of higher priority such as bypasses, infiltration and inflow problems, and failing septic systems. Currently 70 to 80% of the phosphorus is removed from wastewater, but to remove any more to meet the standards would double the operating costs.

39. ENVIRONMENTAL PROTECTION AGENCY; Robert S Burd, Director, Water Division;
Written Testimony (A17)

Strongly supports standards with alternative #1 offering two major advantages over alternative #2 but also having two potential problems. Comments included:

- o Advantages of Alternative 1 are: (1) Chlorophyll a provide a direct measure of algal biomass whereas nutrient concentrations do not; and (2) there is a poor correlation between specific nutrient levels and eutrophication indicating that other factors than nutrients are important.
- o Problems with the proposed Chlorophyll standard are: (1) it is unclear where in the water column measurements would be made, the standard should specify the collection point; and (2) the standard does not address macrophytes or periphyton. Consideration of these types of nuisance growth should be given before adoption of a chlorophyll a standard.
- o EPA noted that North Carolina has been pleased with the utility of a Chlorophyll a Standard that it had adopted in 1979. Hawaii has chlorophyll a standard for estuarine and ocean waters and California has a chlorophyll a standard for estuarine waters of San Francisco Bay.
- o Recommended the adoption of new criteria (July 29, 1985) for un-ionized ammonia regardless of which nutrient standard is adopted.

40. US SOIL CONSERVATION SERVICE Ed Weber, District Conservationist; Oral Testimony (O-20, Medford)

Did not oppose or support the options presented, but offered information. Cautioned that the state should not adopt standards that would be restrictive to agriculture. The current agricultural practices are the best possible by todays technology, follow BMP's, and are revised as necessary to achieve compliance. If nutrient standards are adopted, some problems may be solved, but others created in the process.

41. WASHINGTON COUNTY; Wes Myllenbeck, Chairman, Board of Commissioners;
Written Testimony (A11)

Opposes both alternatives but supports the proposal for additional research and study to specifically identify the problem and impacts that might result from the imposition of nutrient standards. Expressed the following concerns:

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- o The cost to achieve the nutrient levels specified in alternative 2 would be so great that new business and industry may find it economically unfeasible to locate in Washington County. The cost may be so prohibitive that a sewer connection moratorium may result.
- o Nutrient standards may require impoundment of storm drainage that could represent a significant cost burden to the County.
- o Suggests that the Tualatin River water quality should not be allowed to decrease but be maintained at a level that will support fish and wildlife. The increase in fish and wildlife populations over the last decade suggest that additional water quality standards are not necessary at this time.

42. WASHINGTON CO SOIL AND WATER CONSERVATION DISTRICT; Cal Krahmer, Water Resource Committee Chairman; Oral (O-5, Portland) & Written Testimony (A3)

Cited ORS 568.225 as giving Wash Co SWCD responsibility to be involved in the discussion of nutrient standards. Expressed strong concern about the lack of funding to implement non-point source programs and that EQC must give an economic consideration to the impacts of adopting nutrient standards. In particular, the ability of various agencies to furnish technical assistance and provide funding to implement an effective non-point source program must be considered. Observed that the Tualatin River has improved in water quality which now better supports irrigation, fishery, wildlife and recreation uses since the addition of an upstream impoundment.

HR0059
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ANALYSIS OF HEARING TESTIMONY

Background for Analysis of Testimony

The Environmental Quality Commission (EQC) reviewed an "Informational Report - Water Quality Standards for Nutrients" (Attachment F) at the September 27, 1985 meeting. Two alternatives which address nuisance aquatic growth and nutrient standards were proposed. The Commission instructed the Department to take both alternatives out to public hearing to receive further testimony before taking any action. Testimony presented at hearings on November 18, 25, and December 2, 1985 and in writing by December 6, 1985 was in response to public notice which solicited comments on: (1) adoption of either alternative, both alternatives, a combination of alternatives, modifications of alternatives or no action; and (2) any evaluation of fiscal and economic impact.

The Department received testimony from 45 agencies/individuals. Those testifying supported the following actions:

- 20 - supported no action at this time (5 indicated support for alternative 1 if a standard is needed.
- 12 - supported the nuisance aquatic growth standard or modification (alternative 1)
- 1 - supported the nutrient standard or modification (alternative 2)
- 6 - supported both standards or modification
- 6 - no opinion of support expressed

The discussion of testimony which follows is organized to focus on 8 major issues which were raised in the testimony:

- A. NEED: Are nutrient and/or nuisance aquatic growth standards needed or are current standards and programs adequate?
- B. PARAMETRIC CONCENTRATIONS: Is there adequate scientific evidence for suggesting parameters and concentrations for addressing nutrient or nuisance aquatic growth?
- C. ACTION: What course of action should be required when standards are exceeded?
- D. COST VS BENEFIT: What are the actual benefits of meeting the standards and what are the costs?
- E. PRIORITIES: Are nutrients and/or nuisance aquatic growth a priority at this time as compared to protection of health and aquatic life?
- F. SOURCES OF NUTRIENTS: How will the contributions from point, non-point and natural sources be determined and regulated?

- G. PREVENTIVE LIMITS: If standards are set at "potential problem levels," how are increasing trends below the levels in sensitive areas addressed?
- H. OTHER SUGGESTIONS: How should other forms of "nuisance" aquatic growth be addressed (i.e. attached algae, rooted plants)? What future action should be taken resulting from suggestions for additional water quality standard revisions?

For each issue, the discussion is organized as follows:

1. Condensed summary of testimony as it relates to the pros and cons of the major issue with references to Attachment A (i.e. the numbers refer to the testimony listed in Attachment A).
2. Evaluation of Alternatives.
3. Conclusions and Recommendations

- A. NEED: Are nutrient and/or nuisance aquatic growth standards needed or are current standards and programs adequate?

SUMMARY OF TESTIMONY

Twenty respondents (1,2,3,4,5,9,12,14,15,17,19,27,28,29,30,31,32,36,37,41) opposed adopting any standards at this time and recommended no action be taken. However, five of these respondents (5,14,28,30,37) stated that if a standard needs to be implemented, then alternative 1 would be more preferable with further refinement than alternative 2.

The following respondents expressed that neither standard was needed because:

- o Current narrative standards or other rules are adequate (19,37);
- o Insufficient evidence was presented to show need for new standards at this time (1,2,5,27,29,30,32,36)
- o Further work is required to develop a proper standard (5,12,15,19,29,32,37)
- o Nutrient pollution is not widespread in Oregon and only site specific standards (vs statewide) are needed to address nuisance conditions in Oregon (33,37)
- o One respondent suggested that further study was needed to identify the problems and impacts of imposing nutrient standards (41).

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The following respondents expressed that both standards were needed to:

- o Meet requirements to protect water quality under federal law (16)
- o Protect other beneficial uses (26)
- o Give the Department the tools it needs to properly deal with nuisance conditions and nutrient problems found in the state (16,18,21,24,25,26)

EVALUATION OF ALTERNATIVES

The issue of standards which address nutrients and/or nuisance aquatic growth was raised during the Department's most recent review of the Water Quality Standards contained in OAR Chapter 340, Division 41. The Commission directed the Department to develop an issue paper which proposes Water Quality Standards for nutrients. The two alternatives presented were proposed to supplement the narrative standards. While the narrative standards provide a means of addressing a nuisance condition once it occurs, they do not provide numeric definition of what might be a nuisance condition or indicate a course of action to follow upon the identification of such a condition. In addition, current policy as contained in the standards recognize the need to protect lakes and reservoirs from nutrient enrichment due to point source discharge by prohibiting the discharge of wastes to lakes or reservoirs without EQC approval. Various studies (such as Clean Lake Phase I studies) and actions (such as nutrient removal from a municipal discharge) have been implemented with existing legal authority. The water quality program has used guidelines in its planning documents to indicate water bodies where nuisance conditions may occur and nutrients may be excessive. These documents form a basis for directing further work as found in documents such as the State/EPA Agreement.

Two options exist. The Department can rely on the existing Standards, Rules and Programs and take no action at this time. The other option is to develop numeric standards to enhance the Department's capability to address nuisance aquatic growth and/or nutrient enrichment.

CONCLUSIONS AND RECOMMENDATIONS

The Department can clearly address nutrient enrichment and nuisance aquatic growth without further standards. There are a variety of approaches that can be used to accelerate identifying and addressing nuisance conditions and nutrient enrichment without establishing numeric standards. The addition of numeric standards would provide a more uniform means of identifying potential nuisance conditions and establish a consistent course of action to follow after problem identification. The Department recommended to the Commission that alternative 1 be taken to public hearing for consideration for adoption (Attachment F, September 27, 1985) as a Standard. The Commission directed that both alternatives be taken out to hearing and, based on the analysis of the hearing record, will decide if numeric standards are needed.

- B. PARAMETRIC CONCENTRATIONS: Is there adequate scientific evidence for suggesting parameters and concentrations for addressing nutrient or nuisance aquatic growth?

SUMMARY OF TESTIMONY

Numerous respondents expressed that the proposed parameters and/or concentrations were inadequate or needed modification.

- o Six respondents stated that neither standard correctly identified a problem or use impairment (5,15,17,28,36,37) and four respondents stated that the parameters and concentrations were too subjective or not well documented (11,29,32,37).
- o Twelve respondents stated that the nutrient criteria were inadequate as there is no universal relationship between nutrient concentrations and aquatic growth (5,6,8,11,12,15,19,20,28,31,37,39).
- o One respondent suggested that natural concentrations and variability of nutrients makes it difficult to establish nutrient standard, that the "red book" rationale were inadequate, and that more data are needed to develop suitable standards (37).
- o Five respondents suggested other factors should be considered with nutrients such as turbidity and flow (5,13,15,29,37) and three respondents indicated that phosphorus is not always the limiting nutrient (5,6,37).
- o One respondent indicated that the nitrate value does not relate nuisance aquatic growth problems and is 10 times higher than suggested levels (29).
- o Three respondents (13,18,29) suggested that a violation of standard could occur by simply changing a physical condition (impounding a river, changing turbidity).
- o Two respondents suggested that chlorophyll was too variable as a measurement and would reflect periphyton growth rather than phytoplankton growth for rivers (5,34). One respondent (5) pointed out that chlorophyll does not distinguish between nuisance and beneficial forms of algae.
- o One respondent (19) suggested that the number river segments that may exceed the proposed standards indicates that the criteria are suspect.
- o Six respondents suggested that both standards were adequate (16,18,21,24,25,26) and were needed together to form a basis for a proper control strategy.

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- o One respondent (39) stated that chlorophyll was advantageous as it provided a direct measure of biomass and that three other States (North Carolina, California, and Hawaii) have adopted some form of chlorophyll standards (only North Carolina's standard applies to fresh waters).
- o One respondent strongly supported the use of a 3 month averaging period.
- o Three respondents (13,28,39) urged the Department to adopt the most recent USEPA criteria (July 29, 1985) for un-ionized ammonia.

Many respondents suggested that modifications and additions were needed to clarify the standards.

- o Nine respondents stated that differences in conditions in the state (eg eastern Oregon vs western Oregon), differences among water bodies (eg rivers vs lakes), and differences between water bodies (eg Waldo vs Sturgeon Lake) required different parameter concentrations
(19,20,19,28,29,30,33,34,37).
Two respondents suggested a further evaluation of Oregon lake and river data to aid in their development (32,37).
- o Four respondents suggested using the Vollenweider lake loading model instead of a phosphorus concentration for lakes (13,15,25,34).
- o One respondent (13) suggested developing a regional approach to the development of nutrient standards based on the ecoregion maps developed by USEPA and building on the studies initiated jointly between DEQ and USEPA.
- o Five respondents (15,29,32,34,39) discussed the need to specify the collection and analytical methodology (ie how many samples, how and where collected, what analytical methods, etc).
- o Two respondents (18,23) suggested that specific wording should be added to allow for less stringent standards when natural conditions are the cause and more stringent standards for sensitive water bodies (eg water supply lakes, scenic waterways).
- o One respondent suggested that intent of alternative 1 was to trigger a further study yet the wording for the criteria stated that "no wastes shall be discharged...", thus requiring a course of action.

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EVALUATION OF ALTERNATIVES

As discussed in Attachment D, the relationship of nutrients, nuisance aquatic growth, and beneficial use impact is complex. To date, there has not been a single numeric value for a parameter(s) which describe when a use would be impaired due to nutrients or nuisance aquatic growth. USEPA has suggested a rationale for the development of nutrient standards in the 1976 "Redbook" which a number of States have adopted as part of their standards. The fact that USEPA has not refined or further developed the rationale indicates the complexity of the issue. A number of States have adopted water body specific nutrient standards or nutrient loading criteria (see Attachment D in Attachment D). Three States (North Carolina, California and Hawaii) have adopted Chlorophyll Standards with North Carolina having good experience using the standard to identify problem areas and water bodies sensitive to nutrient enrichment (see Testimony 39). Nutrient and nuisance aquatic growth standards are admittedly subjective as no one has numerically defined when a nuisance condition that would affect a use. Therefore, nutrient and nuisance aquatic growth standards are generally useful as guidelines for areas where site specific, basin or regional studies are needed. It appears that the chlorophyll measurement offers the advantage of measuring algal biomass rather than the potential for algal growth and therefore would be a better indicator of where nuisance conditions could occur. Obviously, nutrients are important to address in any subsequent action based on finding high chlorophyll levels.

The Department agrees that other factors such as flow, turbidity and physical conditions will affect growth potential. This is another reason that chlorophyll would be a better screening parameter. The Department agrees that the potential for having different levels for different water bodies (eg lakes vs rivers) or different parts of the state should be further explored and should involve a further analysis of Oregon data (this analysis is found in Attachment B). By having a different criteria for different water bodies, other factors such as flow or affects of periphyton can be factored in. The Department agrees that there can be high variability in both chlorophyll and nutrient measurements and should maintain the three month averaging to indicate general nuisance conditions and avoid reacting to short-term blooms. In addition, suggestions for sampling and analytical methodology should be made. Techniques for determining permissible areal lake nutrient loading (Vollenweider Model) and total maximum daily loads are useful tools that can be currently applied or could be used with new standards. New standards are not required in order to use them.

Both the nitrate and un-ionized ammonia standards were suggested since the Department was addressing nitrogen and phosphorus forms as part of a nutrient standard (alternative 2). It was stated in the staff report (Attachment F) that the suggested standards related to drinking water and aquatic life uses and not to nutrient enrichment and nuisance aquatic growth. The Department is currently developing discussion papers on pesticides and other toxic substances, it would be more appropriate to further develop proposed nitrate and un-ionized ammonia standards through those discussion papers.

A variety of options exist. The chlorophyll standard, nutrient standard, both standards or neither standard could be further refined.

CONCLUSIONS AND RECOMMENDATIONS

Admittedly, either standard is a subjective indicators for nuisance conditions. The nutrient standard could serve as screening standards as there is no universal relationship between a nutrient concentration and aquatic growth. Chlorophyll could be a better indicator of waters where nuisance phytoplankton conditions may be found. The Department should proceed with refinement of chlorophyll criteria. Nitrate and un-ionized ammonia should be further developed in the issue paper which updates the pesticide and other toxic substances sections of the standards.

- C. ACTION: What course of action should be suggested when standards are exceeded?

SUMMARY OF TESTIMONY

A major issue concerning the proposed alternatives was the proposed course of action. In general, the greatest concern was over the fixed course of action described in alternative 2 (e.g. effluent limits if values are above standard) and there was greater support for the further study approach (although costs and other concerns were expressed about this approach).

- o Six respondents strongly stated that the fixed course of action in alternative 2 was too limited, restrictive, and/or inappropriate (5,6,11,19,28,37). Two respondents were concerned with the fixed course of action in alternative 2 and the time needed to conduct facility planning in order to implement nutrient removal (10,37). One respondent expressed that option 2 does not permit use of "available and reasonable methods" to achieve a standard as required by Oregon law (37).
- o Three respondents (20,28,37) indicated that the nutrient limits required in alternative 2 could be met only through advanced waste treatment (AWT), were not routinely achieved through today's technology and would result in expensive treatment systems which would either require large land areas (for land disposal) or create sludge problems (additional sludge which would be difficult to compost). It was noted that many AWT plants in the United States have been abandoned because they were too costly to operate and no environmental benefit was gained.
- o Three respondents (13,29,40) were concerned that attempts to achieve nutrient standards could result in other water quality problems such as increased turbidity or addition of chemicals that are toxic to fish and other forms of aquatic life.

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Eight respondents (6,7,11,20,25,28,30,37) stated that further study as specified in alternative 1 was preferable since it consists of a logical series of steps from determining whether a real problem exists through to adopting control strategies that address a specific water body or site.

- o Four respondents indicated that both courses of action were required as alternative 1 invoked a corrective action and alternative 2 invoked a preventive action (16,21,24,25). These four respondent believed that nutrient standards were required as a basis for establishing total maximum daily loads. In addition, the nutrient standards would lead to the use of cost effective and environmentally appropriate land treatment systems rather than expensive and energy intensive tertiary treatment plants.

EVALUATION OF ALTERNATIVES

Given that nutrient/nuisance aquatic growth standards are somewhat subjective and do not necessarily relate to a use impact, the prescribed course of action must be carefully chosen. The course of action prescribed in alternative 2 has the advantage of being fixed and leaving little doubt as to the strategy to achieve compliance. However, it may be quite costly and restrictive and may not achieve any environmental benefit. The course of action in alternative 1 sets up a logical process for determining if a use is impaired, examines alternatives based on site or area specific data, and involves a hearing process which provides reasonable assurance that the required control strategy is understood and will achieve an environmental benefit. This course of action appears to be more appropriate given that the subjectivity of the standards. Waste load allocation and more stringent standards could be required under either alternative as well as under current standards. Both options would probably require advanced wastewater treatment (AWT) in certain areas but the type of treatment is not specified. EPA currently requires detailed justification of need when providing Construction Grant Funding for projects with AWT requirements; violation of a statewide nutrient standard would most likely not be sufficient justification. Data and analysis from a site specific study would most likely provide sufficient justification.

Four alternatives exist. Retain the further study course of action (alternative 1), retain a fixed course of action (alternative 2), retain both, or develop new courses of action as suggested under "other suggestions."

CONCLUSION AND RECOMMENDATIONS

The course of action prescribed in alternative 1 is advantageous given the subjective nature of the standard and the fact that they do not directly relate to use impairment. In addition, the need to develop specific knowledge of nutrient and environmental interactions, identify nutrient sources, determine available control measures and achievable environmental results in order to implement a successful control program is factored into this course of action. The course of action in alternative 1 (further study) should be retained in the standard refinement and that a fixed course of action such as suggested in alternative 2 should be considered only after further study and proper justification.

- D. COST VS BENEFIT: What is the actual benefit of meeting the standard and what are the costs?

SUMMARY OF TESTIMONY

Considerable concern was expressed over the costs of achieving the standard. A majority of the concerns were focused on alternative 2 which would require nutrient removal when the nutrient standard was exceeded. Alternative 1 may also require this but after further study, development of control strategies, hearings and adoption.

- o The following respondents expressed cost concerns as related to:
 - agriculture - 3,19,27,35,40,42
 - economic development - 31,36,41
 - industry - 19,29,31
 - municipalities and sewer users - 2,4,5,7,8,9,10,12,17,20,28,36,37,41
 - municipalities for storm water control - 4,9,36,37,41
 - state & federal agencies for administration - 5,11,13,14,19,22,29,30,33,42
- o Several respondents stated that the Department must determine the cost prior to adoption of any standard (1,36,37) or determine the cost vs the benefit prior to requiring nutrient control (28,37).
- o Many respondents expressed concern that achieving a nutrient standard (especially a single uniform value) would not result in any measurable benefit (14,17,19,36,37) citing that nutrient concentrations do not universally relate to algal growth. One respondent indicated the benefit for meeting the proposed nutrient standard under alternative 2 in the Willamette River near Oregon City would be a reduction of .004 mg/l of P (barely significant in the range of Phosphorus levels found in the Willamette) at a cost of millions to the Clackamas County Sewer District (5).

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- o One respondent expressed concern that other water uses (e. g. hydropower) would be affected by implementation of such standards (29).
- o Several respondents (16,21,24,25,26) stated that the standards would achieve the benefit of reducing nuisance growth problems in Oregon. While there would be costs involved, the standards would force the development and use of cost-effective technologies.

EVALUATION OF ALTERNATIVES

As discussed in Attachment F (Informational Report on Nutrient Standards), the advantages of the course of action in alternative 1 were that the final control strategy was based on site specific data which provides reasonable assurance that controls will achieve the desired environmental benefit and that the hearing process assures that the ramifications of issues are understood before implementation. The course of action in alternative 2 leaves little doubt as to the strategy to achieve compliance with the nutrient standards but could be costly with little environmental benefit. There is no doubt that costs could be high for implementing nutrient removal with the adoption of either alternative. However, the implementation of nutrient removal (with associated costs) exists with the current standards. Whereas the cost for pollution control is always a concern, it should not be the determining factor on whether a nutrient standard should be adopted.

CONCLUSIONS AND RECOMMENDATIONS

Costs should not be incurred for the sake of achieving a standard unless the standard is an objective measurement of use impairment. In the case of nutrient/nuisance aquatic growth standards, the standard is more of a guideline indicating where level are high and further study is needed. Therefore, a course of action which requires a hearing process prior to implementing a control strategy will be required so that factors such as cost can be fully understood and affected parties have a chance to comment.

- E. PRIORITIES: Are nutrients and/or nuisance aquatic growth a priority at this time as compared to protection of health and aquatic life?

SUMMARY OF TESTIMONY

Numerous respondents suggested that the issue of nutrients and/or nuisance aquatic growth was of questionable priority at this time.

- o Eight respondents (2,11,14,17,30,33,37,41) questioned the priority of addressing nutrient standards and the related expenditures of resources as compared to human and aquatic health issues (e.g. toxicity, bacterial contamination, sedimentation, etc).

- o One respondent (42) stated that funding for non-point control programs was given such a low priority that management agencies are unable to implement adequate programs.
- o Several respondents (13,21,24,25) stated that the adoption of standards would translate into a need for DEQ to develop and implement more effective water quality management programs.

EVALUATION OF ALTERNATIVES

Nuisance aquatic growth can affect uses such as swimming, boating, fishing, water supply, animal watering, aesthetics and protection of aquatic life. Water quality standards are designed to protect the beneficial uses of the water. Therefore, it is important to address aquatic nuisance conditions in the standards.

The relative priorities for committing limited staff and financial resources is always a concern not only to the Commission and Department management but to the public as well. The relative priorities are particularly important as the agency is becoming more involved in new areas such as hazardous waste control and groundwater protection. Alternative 1 strongly involves the Commission in establishing relative priorities by approving the study schedule and adopting control strategies. This is a benefit given the subjective nature of the standard and the fact that exceedence of the criteria does not necessarily indicate use impairment. Alternative 2 establishes the attainment of nutrient standards as a fairly high priority given the fixed course of action.

CONCLUSIONS AND RECOMMENDATIONS

The course of action listed in alternative 1 allows the Commission to establish a relative sense of priorities for conducting nuisance growth studies and to adopt control strategies. This course of action will be retained in the refinement of the standard.

- F. SOURCES OF NUTRIENTS: How will the contributions from point, non-point and natural sources be determined and regulated?

SUMMARY OF TESTIMONY

Many respondents questioned the ability to adequately treat and control natural, non-point and point sources of nutrients.

- o Thirteen respondents (4,5,9,12,13,17,18,19,20,28,29,30,37) stated that background levels of nutrients and chlorophyll were not adequately addressed or discussed and that alternative 2 did not properly account for the fact that natural background levels can be high and are difficult to control.

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- o Four respondents (19,27,30,35) were concerned about how industries such as forestry and agriculture whose practices may create non-point sources of nutrients would be affected by the standards.
- o Eleven respondents (4,5,8,9,16,19,21,24,25,27,30) were concerned that non-point sources cannot be adequately addressed to affectively achieve beneficial levels or that the focus would be on point sources of nutrients since they are easier to control than non-point sources.
- o Four respondents (16,21,24,25) stated that the standards would create a focus on non-point source problems and relieve the burden of wastewater treatment and control now imposed on point sources.
- o Several respondents (6,7,8,11,16,20,23,25,28,30,32,39) stated that the course of action under alternative 1 would allow for proper identification of nutrient sources.

EVALUATION OF ALTERNATIVES

Sources of nutrients are important to determine under any control strategy. The Department recognizes that natural background levels vary considerably and can be quite high. This fact along with the poor correlation of nutrient concentrations to aquatic growth levels make the establishment of a nutrient standard difficult. Most research is focused on examining the affects of nutrient loads from the various sources on a given water body. Studies conducted under alternative 1 would be able to address nutrient budgets from various sources, take into account natural levels of nutrients, develop both point and non-point control strategies aimed at achieving environmental benefit, and consider the impact on the affected parties. Action under alternative 2 would focus on decreasing nutrient concentrations when they exceeded specific levels. Developing suitable control strategies to fit different situations and accounting for naturally high background levels can occur in alternative 2, but upon modification of the standard on a water body or stream reach basis.

CONCLUSIONS AND RECOMMENDATIONS

The course of action listed under alternative 1 is preferable in that it allows greater flexibility to address nutrient sources and develop suitable control strategies for the specific area.

- G. PREVENTIVE LIMITS: If standards are set at "potential problem" levels, how are increasing trends below the standards levels in sensitive areas addressed?

SUMMARY OF TESTIMONY

Several respondents expressed concern over how pristine and/or scenic waters could be given a higher degree of protection than the standard would allow and whether an increasing trend in a criteria could trigger an appropriate response.

- o One respondent (23) stated that those rivers segments and lakes designated as scenic waterways should receive special consideration for the maintenance of pristine water quality.
- o One respondent (18) expressed concern for pristine waters (such as a pristine water source) in situations where concentrations approaching standard levels would demonstrate an impairment of uses. The respondent suggested that a significant upward trend should trigger a protective response and that the rule should address those unique situations where a higher or lower waterbody standard can be demonstrated to be necessary or desirable.

EVALUATION OF ALTERNATIVES

The issue providing a greater degree of protection for sensitive waterways has been raised in earlier standard reviews. Currently standards do address protection of high quality waters in scenic areas such as state parks, national scenic waterways, etc under Policies and Guidelines Generally Applicable to All Basins (ORS 340-41-026 (1) (a)). This policy is currently under review and will be discussed in the subsequent issue paper.

The request to use an increasing trend to trigger an appropriate action warranted further analysis. At this point in time, further staff analysis is needed to determine if appropriate statistical trend indicators can be developed given the inherent difficulties in establishing proper criteria.

CONCLUSIONS AND RECOMMENDATIONS

Further staff work is required to determine if "trending" standards can be developed to provide additional protection to sensitive and scenic waterways. Some of this work may be presented in an issue paper discussing anti-degradation.

- H. OTHER SUGGESTIONS: How should other forms of nuisance aquatic growth be addressed (ie attached algae, rooted plants) and what future action should be taken resulting from suggestions for additional water quality standards?

NUTRIENT ANALYSIS

January 31, 1986

Page 14

SUMMARY OF TESTIMONY

Several suggestions or concerns were expressed for addressing other forms of nuisance growth or for the addition of new standards.

- o One respondent (6) stated that the current narrative language in the Standards should be retained to allow the Department to address other nuisance conditions.
- o Six respondents (5,13,15,23,37,39) expressed concern that the new standards do not address nuisance macrophyton (rooted plants) which are common problems in lakes and nuisance periphyton (attached algae) which are common problems in rivers.
- o One respondent (30) suggested testing a pilot approach to developing nutrient standards by studying an area of the state before adoption of statewide standards.
- o One respondent (37) suggested an approach of allowing local groups to initiate further studies based on their perception of the existance of nuisance conditions. In addition, two respondents (32,37) suggested the development of an Oregon lake management program similiar to that of Washington to deal with nuisance aquatic conditions.
- o One respondent (21) suggested a modification to the temperature standards.

EVALUATION OF TESTIMONY, CONCLUSIONS AND RECOMMENDATIONS

The Department proposes additional nutrient/nuisance aquatic growth standards to supplement the current narrative standard does not propose to delete them. The Department recognizes that the proposed standards do not address attached algae or rooted plant growth. The current narrative would still address these forms of plant growth. There has been limited development of new rationale that would provide a basis for modifying the narrative standard. Limited research has been conducted to provide a basis for developing numeric standards to address these forms of growth. The Department recognizes that both forms can be and are problematic in selected waters of the state (e.g., excessive weed growth in Blue Lake (Multnomah County) and Devils Lake (Lincoln County) and will continue to explore better ways of addressing and controlling nuisance growth.

The Department plans to conduct a study in the Tualatin River Basin in 1986 to address a variety of concerns including potential nuisance growth conditions. This study will be viewed as a pilot study for testing whatever standards that are adopted and for serving as a basis for refining future work.

The modification of temperature standards may be considered during the next standard review.

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RATIONALE FOR CHLOROPHYLL a LEVELS AND METHODOLOGYCHLOROPHYLL AS A STANDARD

The characteristic algal pigments are chlorophylls, xanthophylls, and carotenes. The three chlorophylls commonly found in planktonic algae are chlorophylls a, b, and c. Chlorophyll a constitutes approximately 1 to 2% of the dry weight of organic material in all planktonic algae and is, therefore, the preferred indicator for algal biomass estimates (Standard Methods for the Examination of Water and Wastewater, 14th Edition 1976). Two methods for determination of chlorophyll a in phytoplankton are available, the spectrophotometric and fluorometric. The fluorometric method is more sensitive, requires less sample volume, and has been adapted for in vivo measurements.

Many studies using chlorophyll a as an indicator of algal biomass have been conducted, especially over the last 15 years. Much of this work has focused on lake environments since these water bodies are the most sensitive to the effects of eutrophication. Eutrophication is one of the problems associated with the pollution of surface waters and is mainly caused by human or human related activities (Vollenweider, 1970). The following discussions highlight some of the problems associated with the development of criteria and standards that would address nuisance aquatic growth and enrichment. These discussions are quoted out of an early work by Dr R. A. Vollenweider entitled, "Scientific Fundamentals of the Eutrophication of Lakes and Flowing Waters, with Particular Reference to Nitrogen and Phosphorus as Factors in Eutrophication," (OECD, 1970). This work was the fundamental basis for the proliferation of studies over the last 15 years and an understanding of these discussions is significant in the development of chlorophyll criteria:

"In defining the (eutrophication) problem, a distinction must be made between causes, symptoms and effects. A study of the discussions and literature devoted to this subject shows that opinions often vary as to the criteria delimiting the three categories. Qualitatively speaking, there seems to be fairly widespread agreement as to the effects. The quantitative aspect, on the contrary, is a subject of disagreement. Anyone accustomed to the infertility of Scandinavian waters will tend to set the eutrophication threshold much lower than an observer used to Central European waters. On the other hand, as the supply of

water is causing increasing concern in the more highly developed countries (which are thus led to marshal all available resources), it follows that the criteria for rating the acceptability of a given state in relation to a scale of deterioration of surface waters must be fairly flexible, and this makes it exceedingly difficult to arrive at a universally applicable quantitative classification of the degree of eutrophication. The only view on which there might be agreement is a practical one: namely, the question as to whether or not, from the standpoint of its multiple uses, a body of water should be regarded as threatened or in fact deteriorated. ..."

"Eutrophication may manifest itself in any of a number of ways, but the combination of factors modified in each of many individual cases of eutrophication is very much dependent on the local conditions at the outset. This has given rise to considerable controversy as to the validity of various factors, both chemical and biological, as "symptoms". ... The following may be mentioned as typical of incipient eutrophication:

(1) A quantitative increase in the biomass, as observed either in the macrophytes and periphytic algae near the shore, or in the planktonic algae of the pelagic regions. Such an increase is usually accompanied at the outset by a decrease in the number of species typical of oligotrophic waters and, simultaneously or subsequently, by the appearance of indicator organisms in the plant communities.

(2) Qualitative and quantitative changes in the littoral, benthic, and planktonic fauna, and in the fish population. While the members of the latter may be bigger at the outset, the changes are more pronounced at a more advanced stage of eutrophication, with a thinning out of the higher species and a corresponding increase in the lower ones. ...

(3) From the physical and chemical standpoints, the decreasing transparency and changing colour of the waters, the development of oxygen maxima or minima within the metalimnic layers, and the overall decline in the oxygen content of the hypolimnic layers during the summer months, i.e. during the period of thermal stratification, and, lastly, a buildup of the average nutrient level (e.g., phosphorus and nitrogen), which can easily be detected by chemical methods. ..."

The type of impairment that may occur to the various uses of a water body are as follows:

- Water Supply - taste and odor problems, increased costs due to filter clogging, chemical treatment, etc.
- Aquatic Life - shifts in abundance and type of organisms from "diverse and desirable" to "low diversity and undesirable." Increase in die offs of aquatic life.
- Animal Watering - taste and odor problems, potential toxicity due to presence of noxious forms of algae.
- Swimming - safety problems due to limited transparency, discomfort due to insect bites and other skin irritations, unattractive conditions.
- Fishing, Boating - interference due to plant growth, unattractive conditions.
- Aesthetics - unattractive conditions, odors, insects

Insofar as indicators of biomass, Vollenweider (1970) stated the following:

"Among the different possibilities listed above for the biochemical determination of phytoplankton, the determination of the chlorophyll content has enjoyed a certain degree of success in limnology (Kozinske 1938, Manning et al. 1941, Juday et al. 1943, Gessner 1944, Berardi and Tonolli 1953, Vollenweider 1956, Becacos 1962, Aruga and Monsi 1963, Sakamoto 1966, and others).

Chlorophyll content is not of course a reliable measure of phytoplankton either, in view of the fact that the pigment content per unit cell volume depends on a number of factors such as the type of species, physiological state of the environment, etc., but if cautious estimations are made, a chlorophyll examination can quickly give worthwhile information on the relative number of photosynthetic organisms contained in water."

Jones and Lee (1982) "stress the fact that for most applications, planktonic algal chlorophyll concentration tends to be the most reliable eutrophication-related water quality indicator." This conclusion was made after reviewing (under an USEPA grant) the results of The Organization for Economic Cooperation and Development (OECD) Eutrophication Study which was undertaken to quantitatively define the relationship between the nutrient (phosphorus) load to a waterbody and the eutrophication-related water quality response. This study characterized the phosphorus load and response characteristics of about 200 waterbodies in 22 countries, including 34 waterbodies in the United States. In addition, the authors evaluated the phosphorus load-response relationship for approximately 40 additional U.S. waterbodies.

In order to properly develop chlorophyll a levels , one must account for differences in types of water bodies. Just as plant growth is dependent upon a variety of environmental factors (such as sunlight, current velocity, temperature and substrate as well as nutrient availability) so is the resultant or potential impact. For example, algal blooms may cause an oxygen deficit and thus affect a fishery in a deep, stratified lake. The same bloom may not cause an oxygen deficit in a shallow, well mixed lake or in a flowing river but may enhance the fishery by providing an abundant source of food. The following discussions will briefly summarize literature and appropriate Oregon water quality data by water body groupings to best indicate suitable chlorophyll criteria.

CHLOROPHYLL LEVELS FOR STRATIFIED LAKES

C. N. Sawyer (1947) related the "greenness" of water to chlorophyll a concentrations and found that concentrations of 0.010 mg/l or greater are often associated with water classified as eutrophic and possessing deteriorated water quality for beneficial uses.

Since that time, chlorophyll a concentrations have received considerable attention in lake classification schemes. Generally, the classification system most widely applied to lakes and reservoirs is the trophic classification system. Surface waters are ranked according to their biological productivity: unproductive lakes are termed oligotrophic ("little-nourished") and productive lakes are termed eutrophic ("well-nourished"). As stated earlier, there is a variety of opinions as to parameters and values to be used in these classification systems. Chlorophyll a concentrations relative to lake classification for several widely used classification systems are shown in Table 1.

Table 1 CHLOROPHYLL a CRITERIA FOR SELECTED LAKE CLASSIFICATION SYSTEMS (chlorophyll a in mg/l)

TROPHIC STATE	Lee et al 1981	Carlson 1977	National Acadamey of Science	Sakamota 1966
Ultraoligotrophic		<0.0003		<0.0003
Oligotrophic	<0.002	0.0003-0.002	<0.004	0.0003-0.0025
Mesotrophic	0.003-0.007	0.002-0.006	0.004-0.010	0.0025-0.015
Eutrophic	>0.010	0.006-0.040	>0.010	0.015-0.040
Hypereutrophic		>0.040		>0.040

Vollenweider (1976) developed a statistical correlation between the areal annual P loading to a waterbody (normalized by mean depth and hydraulic residence time) and the eutrophication response of the waterbody as measured

by mean chlorophyll concentration. Rast and Lee (1982) substantiated the general relationship, defined it for a greater number of waterbodies, and modified and expanded Vollenweiders work. Some of this work is summarized in Figures 1 and 2. Figure 1 shows the relationship developed between mean depth/hydraulic residence time to phosphorus loading. Excessive and permissible loading curves are shown but it should be pointed out that they do not represent sharp boundaries of water quality. For waterbodies having a given mean depth/hydraulic residence time quotient, there is a vertical gradation in water quality with waterbodies having better water quality plotting toward the bottom and those having poorer water quality plotting toward the top. Figure 2 shows the phosphorus load-eutrophication related water quality response relationships for US waterbodies with 95% confidence intervals shown. The interested reader should consult the bibliography for further discussions of this work.

The relationships shown in Figures 1 and 2 can be used with data contained in the "Atlas of Oregon Lakes" to predict mean summer chlorophyll a concentrations based on estimated permissible phosphorus loads. This analysis can be found in Table 2. As shown, for lakes with mean depth and hydraulic residence time calculated, a permissible phosphorus loading was calculated using Figure 1. It should be strongly noted that the permissible loading does not suggest a desirable or actual loading but provides an indication of a loading that would result in "acceptable" summer recreational chlorophyll averages (the lines were developed using .002 mg/l chlorophyll a averages). The permissible loads can be normalized by several factors (based on the lake's mean depth and hydraulic residence time). An estimate of the mean summer chlorophyll a values for these lakes can then be made using Figure 2 which is based on actual responses of U.S. waterbodies with the given normalized loading.

This estimate, along with the 95% confidence intervals shown, can be used to suggest the ranges of summer mean chlorophyll values that might be found in Oregon lakes given phosphorus loadings at the upper permissible limit. As shown in Table 2, the estimated mean summer chlorophyll a values might typically range from .002 mg/l to .008 mg/l for most Oregon lakes. Saline lakes (e.g., Abert, Goose, Summer) and marshes (e.g., Malheur) have much higher values ranging from .010 to .060 mg/l. A summer chlorophyll and pH value are also shown in Table 2 to give an indication of values detected in the lake as determined in the Lake Atlas.

If one examines the range typically found for the Oregon lakes which were examined and factors in the 95% confidence level, a mean summer chlorophyll a value of 0.010 mg/l appears to be a reasonable guideline. In examining Figure 2, using a normalized annual areal phosphorus loading of 10, one would expect a mean summer chlorophyll a level of .010 mg/l at the upper end of the 95% confidence range. Remembering that the normalized load was based on a maximum permissible load, the .010 mg/l chlorophyll a value would represent an average condition at the upper "acceptable" range. Values above this concentration may represent conditions which reflect excessive loadings.

All this does not imply that average chlorophyll values above .010 mg/l would represent a nuisance condition but would tend to indicate where further study may be warranted to determine the factors responsible for the lake eutrophication. One must also keep in mind that eutrophic does not mean "undesireable" or "due to human influence." Eutrophic lakes are often excellent fishing lakes and do occur naturally.

Based on the above analysis, it appears that 0.010 mg/l is a suitable screening criteria for Oregon lakes at this time. Staff recommends that this value apply to stratified lakes where mixing to the bottom does not occur after stratification. Reasons for this are discussed in the next section. Saline lakes, small ponds (10 acres or less) and marshes should be excluded as their chemistry is complex (saline lakes) and they are naturally shallow and productive waterbodies where the excessive growth would not affect uses or would be extremely difficult to control.

CHLOROPHYLL LEVELS FOR RIVERS, RESERVOIRS, UNSTRATIFIED LAKES AND ESTUARIES

The intent in developing nuisance growth criteria is to indicate waterbodies where further study is needed to determine (in part) if water uses are being affected. Waterbodies, such as rivers, shallow lakes, reservoirs and estuaries, are generally shallow, well mixed and have short retention times. Chlorophyll levels, such as suggested above for stratified lakes, may be observable and could interfere with such uses as water supplies. However, as these waterbodies are well mixed, affects such as dissolved oxygen deficits do not generally occur at the lower chlorophyll levels. Nutrient loading are generally different in that sources such as bottom sediment or bank erosion are significant and less controllable. In addition, chlorophyll concentrations may reflect attached algae (periphyton) eroded from bottom substrate rather than a phytoplankton response due to nutrient loadings. For the above reason, as well as reasons suggested in the Nutrient Hearing Testimony, a higher chlorophyll value should be suggested as the screening criteria for rivers, unstratified lakes, reservoirs and estuaries.

There is limited literature available to suggest chlorophyll criteria for these waterbodies. Therefore, three month average values were determined from data collected on Oregon rivers since 1978. These values were compared with monthly averages regardless of year to give a basis to screen for data outliers. Values were compared to potential chlorophyll limits of .01, .015, .02, and .025 mg/l. Sites and exceedence of potential criteria values are shown in figure 3. Sites where other water quality standards which may be caused by algal growth (particularly pH and dissolved oxygen) were determined from Water Quality Program Status Assessment Reports (1982 and 1984). These sites were circled in Figure 3. From this analysis, a suitable chlorophyll level that suggests a relationship with potential impairment of uses (as indicated by violation of pH and dissolved oxygen) could be determined. One should be cautioned that this analysis does not suggest a direct relationship of phytoplankton growth and the violation of other water quality standards since

factors such as biochemical oxygen demand (BOD) and ammonia or other forms of aquatic growth such as periphyton may account for the observed violation of standard.

Two patterns are apparent in Figure 3. The first pattern is that the .01 mg/l level appears to be violated frequently with no indication of related water quality problems. Most notable are the exceedences observed in the Deschutes River which most likely reflect periphyton growth being washed downstream rather than nuisance phytoplankton. The .015 mg/l concentration appears to be a more reasonable level. Only two sites, one in the South Umpqua and one in the Coquille, indicate other water quality problems and have lower chlorophyll levels. This can be explained by factors such as proximity to point sources for both sites and abundant periphyton and macrophyte growth at the S. Umpqua site.

The second pattern that is apparent is that excessive growth as indicated by chlorophyll a concentrations may occur in many eastern Oregon streams but other related water quality problems were not apparent as suggested by the accompanying data. This might be explained, in part, by the different dissolved oxygen and pH standards that apply to these basins, time of day samples were collected as well as the limited data collected in some of these basins. This pattern merits further study as suggested by the course of action in the standard. A higher standard for eastern Oregon water may be warranted but further study is needed. It is also apparent that basin specific standards for the Klamath River are needed.

Based on the above analysis, the Department suggests that an average concentration of .015 mg/l be used at this time as the screening criteria for rivers, shallow unstratified lakes, reservoirs, and estuaries. Analysis of selected unstratified lakes (e.g., Blue, Devils and Garrison) verifies that this value may be suitable in reflecting nuisance conditions.

METHODOLOGY

Since algal distribution is often quite patchy both horizontally and vertically, the Department suggests that screening should represent more generalized conditions. Therefore, collection is suggested at represented sites such as over the deepest point of a lake or in mid-flow of a river rather than in side channels or along shorelines. Similarly, a vertically integrated sample to a depth equal to twice the secchi depth or the bottom (the lesser of the two depths) is recommended in order to provide an estimation through the photic zone (or lighted surface layer). A three month average was suggested to represent more typical conditions and to reduce the influence of short-term bloom conditions. In addition, much research has focused either on spring or summer conditions which would be included in a three month average.

Peak growth as well as peak recreational use typically occur in the summer months which are included in this three month average. Given the variability in growing and water use seasons statewide, a three month average allows for flexibility to address local conditons. The Department recommends the use of Standard Methods or other methods approved by the Department to insure data validity.

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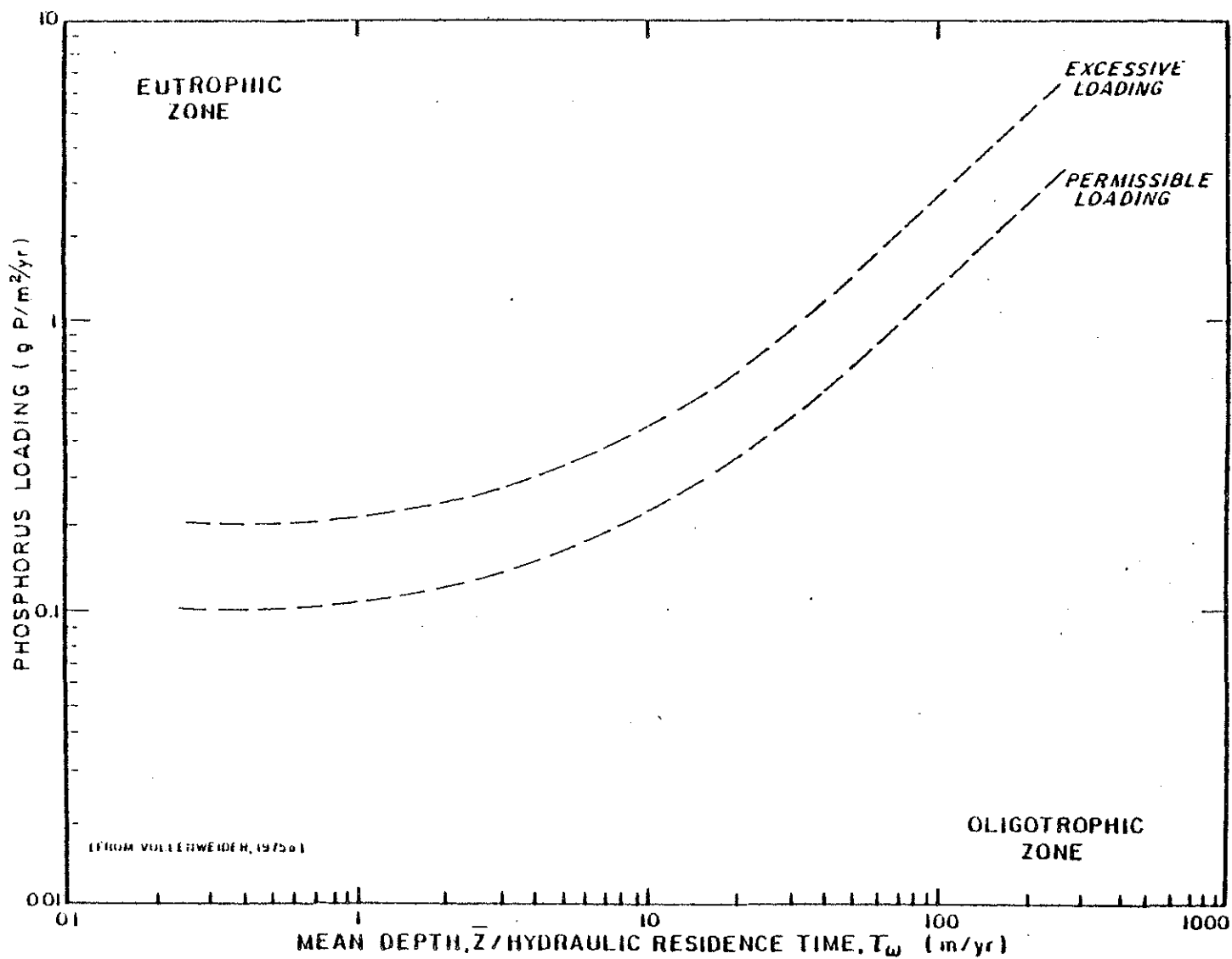


Figure 1. Modified Vollenweider Total Phosphorus Loading and Mean Depth/Hydraulic Residence Time Relationship.

Ref: After Rast and Lee, 1978

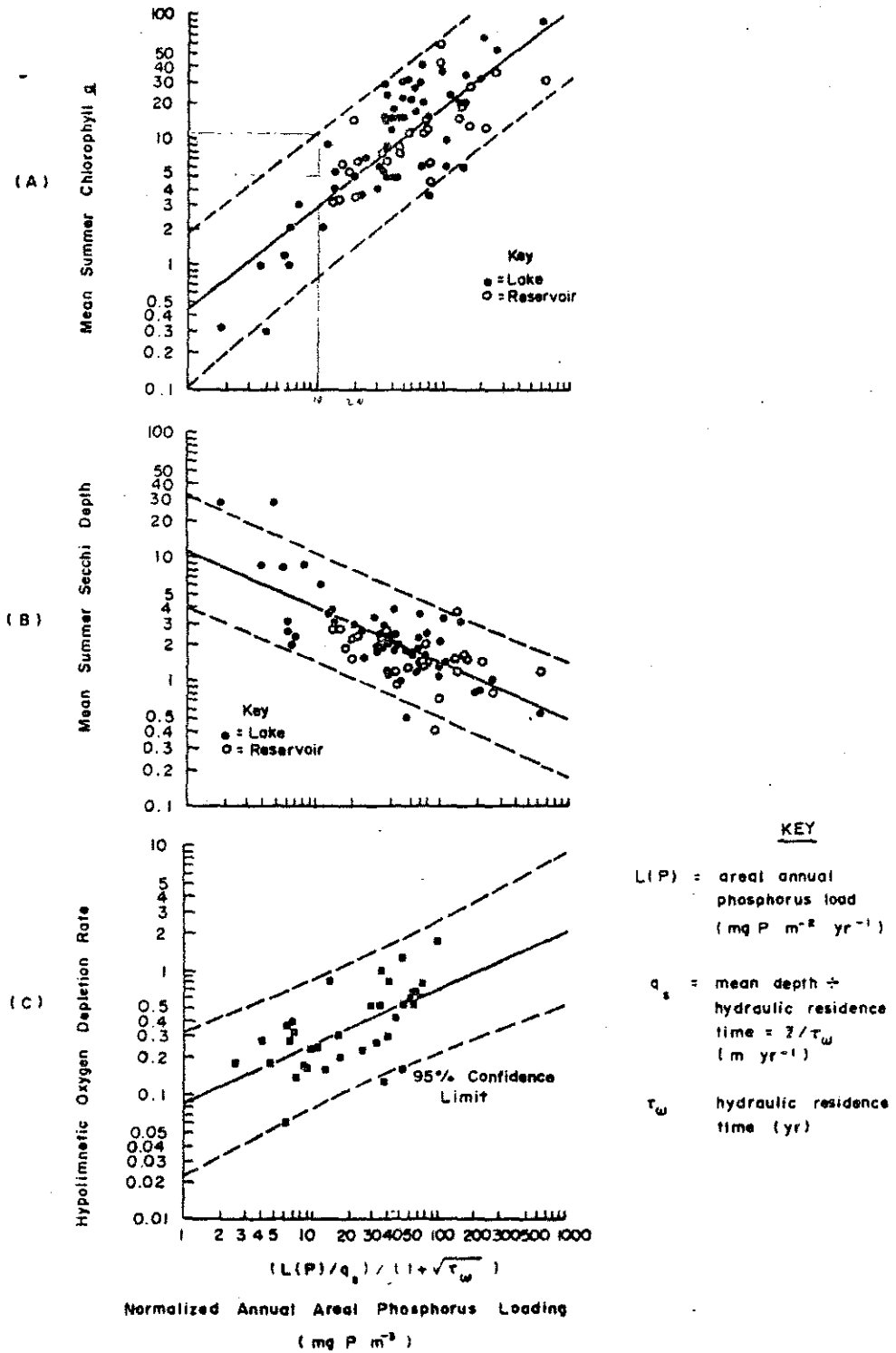
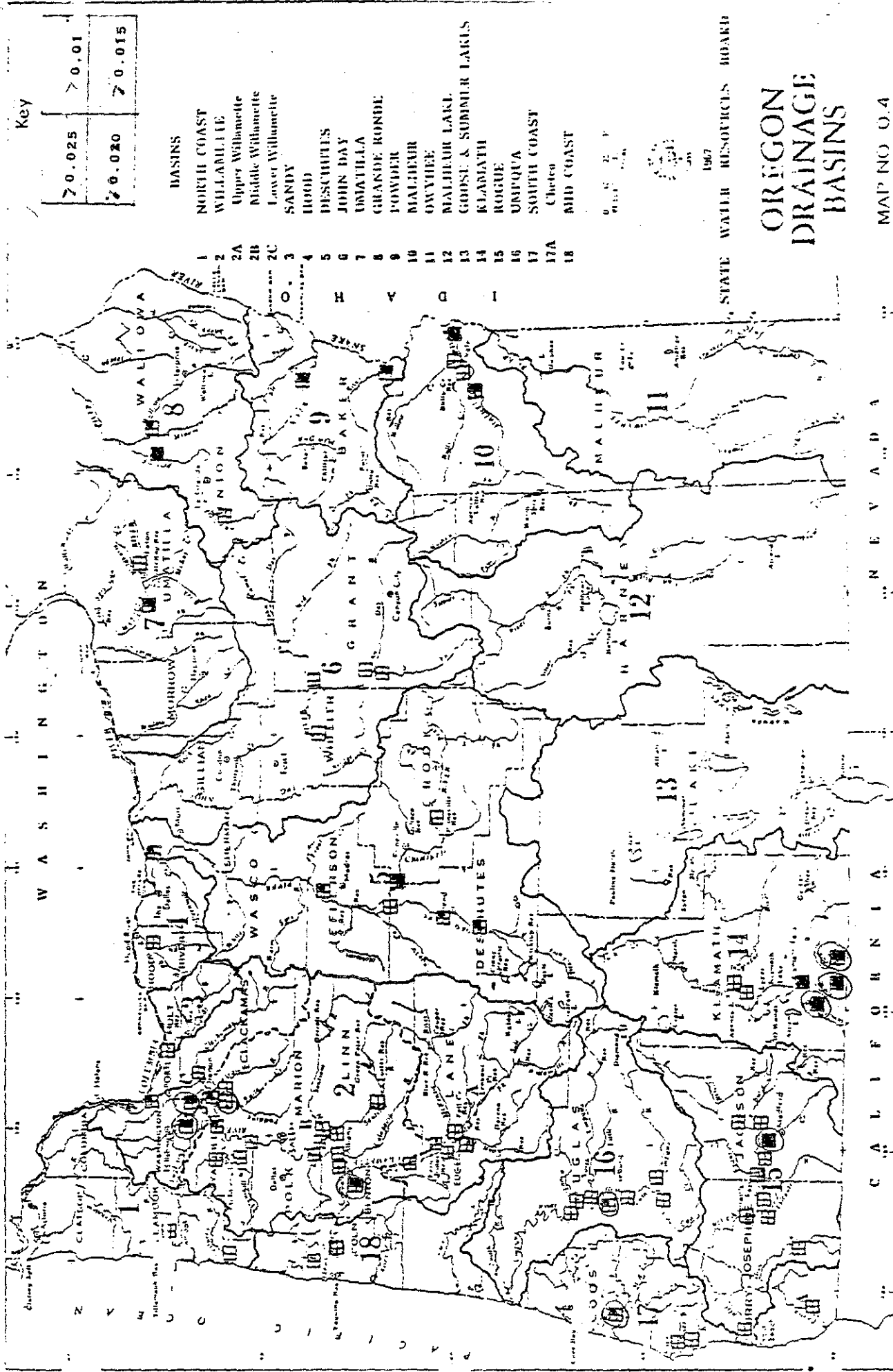


Fig. 2. Updated P load-eutrophication related water quality response relationships for U.S. waterbodies.

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FIGURE 3: THREE MONTH AVERAGE CHLOROPHYLL A CRITERIA EXCEEDANCES



Key

> 0.025	> 0.01
> 0.020	> 0.015

BASINS

- 1 NORTH COAST
- 2 WILLAMETTE
- 2A Upper Willamette
- 2B Middle Willamette
- 2C Lower Willamette
- 3 SANDY
- 4 UMOOD
- 5 DESCHUTES
- 6 JOHN DAY
- 7 UMATILLA
- 8 GRANDE RONDE
- 9 POWDER
- 10 MALHEUR
- 11 OXYHEE
- 12 MALHEUR LAKE
- 13 GOOSE & SUMNER LAKES
- 14 KLAMATH
- 15 ROGUE
- 16 UMPQUA
- 17 SOUTH COAST
- 17A Chetco
- 18 MID COAST

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1967

OREGON
DRAINAGE
BASINS

MAP NO. O-4

TABLE 2

PREDICTED SUMMER AVERAGE CHLOROPHYLL A VALUES FOR SELECTED OREGON LAKES.

(SOURCE: ATLAS OF OREGON LAKES.)

LAKE NAME	COUNTY	TROPIC CLASSIFICATION	MEAN DEP RES TIME		Qs (z/Tw) (m/yr)	Permis P Load L(P) (gP/m yr)	(1+ Tw) Norm AA P Load (g P/a)	Ave Sum Chlor a (ug/l)	Sum Chl a value (ug/l)	pH	
			z (m)	Tw (yr)							
UNITY RES		EUTROPHIC	8.2	0.43	19.1	0.35	1.66	11.1	3.4	17.7	9.6
UPPER COW LK		HYPEREUTROPHIC	2.2	0.42	5.2	0.16	1.65	18.5	5.1	5.6	7.8
UPPER KLAMATH LK		HYPEREUTROPHIC	4.2	0.04	185.0	1.40	1.20	11.1	3.4	4.4	9.1
UPPER TUMALO RES		MESOTROPHIC	1.8							0.6	6.4
VALSETZ RES		MESOTROPHIC	3.5	0.28	43.8	0.65	1.28	11.6	3.5	1.6	7.0
VERNONIA WILDFORD		MESOTROPHIC	0.5							3.1	6.7
WATSON LK		OLIGOTROPHIC	18.2	1.4	13.0	0.28	2.18	9.9	3.1	0.7	6.9
WELLS LK		ULTRAOLOGOTROPHIC	39.0	32.0	1.2	0.11	6.66	13.6	4.0	0.1	6.7
WILLOW LK		OLIGOTROPHIC	49.1	2.5	19.6	0.35	2.58	6.9	2.4	1.9	8.2
WILSON RES		MESOTROPHIC	3.5	0.5	7.0	0.19	1.71	15.9	4.5	3.2	8.3
WORM SPRINGS RES		EUTROPHIC	28.7	2.2	9.4	0.22	2.48	9.4	3.0	3.7	8.1
WICKIUP RES		MESOTROPHIC	6.1	0.42	14.5	0.30	1.65	12.5	3.8	1.7	7.6
WILLOW RES		EUTROPHIC	7.2	0.5	14.4	0.38	1.71	12.2	3.7	1.9	7.7
WILLOW VALLEY RES		EUTROPHIC	3.5	0.33	18.6	0.25	1.57	15.0	4.3	5.2	7.2
WINDOSEE LK		OLIGOTROPHIC	1.6							0.3	6.6
WORTH LK		OLIGOTROPHIC	9.9	1.2	8.2	0.28	2.10	11.6	3.5	1.0	7.5
WYCK RES		EUTROPHIC	14.2	1.8	7.9	0.20	2.34	10.8	3.4	4.1	8.0



STATE OF OREGON
Environmental Quality
Laboratories & Applied Research

INTEROFFICE MEMO

TO: Interested Parties

DATE: October 16, 1985

FROM: Andrew L. Schaedel

SUBJECT: Nutrient Standards

At the September 27, 1985 meeting, the Environmental Quality Commission (EQC) reviewed an "Informational Report - Water Quality Standards for Nutrients" (attached) and received testimony on the subject. Two options which address nuisance aquatic growth and nutrient standards were proposed (pages 6&7 in the attachment). The Commission requested that the Department take both options out to public hearing to receive further testimony before taking any action. After receiving a summary of public comment, the Commission may adopt either option, both options, a combination or modification of options or take no action.

The Commission also recommended that the nutrient standard option be restricted to a seasonal basis. The Department is suggesting that this standard be limited to the summer period. This period is suggested because it covers the peak recreational use season, the period of peak nuisance aquatic growth and the low flow period.

The Department has conducted a preliminary analysis of ambient river data collected since 1978. The purpose of the analysis was to suggest which major rivers of the State may be in violation of the suggested standards. The results are summarized in Table 1.

If you have further questions on the attached material, please contact Andy Schaedel at 503-229-5983 or toll free at 1-800-452-4011.

TABLE 1

PRELIMINARY ANALYSIS OF STREAM SEGMENTS EXCEEDING
 PROPOSED NUTRIENT STANDARDS
 (BASED ON DEQ AMBIENT RIVER DATA 1978 - 1984)

RIVER SEGMENT (RIVER MILES)	CHLOROPHYLL a THREE MONTH AVERAGE	TOTAL PHOSPHORUS SUMMER AVERAGE
COQUILLE R NR COQUILLE (RM 0-36)	X	
UMPQUA R BELOW ROSEBURG (RM 47-103)	X	X
S. UMPQUA R NR ROSEBURG (RM 0-15)	X	X
ROGUE R BELOW GRANTS PASS (RM 27-95)		X
ROGUE R NR GRANTS PASS (RM 95-111)		X
ROGUE R NR MEDFORD (RM 111-127)		X
BEAR CK NR MEDFORD (RM 0-23)	X	X
L. BUTTE CK NR EAGLE POINT (RM 0-17)		X
WILLAMETTE R NR PORTLAND (RM 3-26)	X	X
WILLAMETTE R NR CANBY (RM 26-45)	X	X
WILLAMETTE R NR NEWBERG (RM 45-63)	X	X
TUALATIN R BELOW HILLSBORO (RM 0-39)	X	X
PUDDING R NR CANBY (RM 0-30)		X
YAMHILL R BELOW MCMINNVILLE (RM 0-11)		X
S. YAMHILL R NR MCMINNVILLE (RM 0-25)	X	
MARYS R NR CORVALLIS (RM 0-17)	X	X
HOOD R NR HOOD R (RM 0-12)		X
DESCHUTES R NR MOODY (RM 0-46)	X	X
DESCHUTES R NR WARM SPRINGS (RM 47-100)	X	X
DESCHUTES R BELOW BEND (RM 100-164)	X	
DESCHUTES R NR SUNRIVER (RM 164-182)	X	
CROOKED R BELOW PRINEVILLE (RM 0-70)	X	X
UMATILLA R NR HERMISTON (RM 0-35)	X	X
UMATILLA R BELOW PENDLETON (RM 35-57)	X	X
GRANDE RONDE R BELOW LA GRANDE (RM 96-160)	X	X
POWDER R BELOW BAKER (RM 0-72)	X	X
BURNT R NR HUNTINGTON (RM 0-42)	X	X
MALHEUR R NR ONTARIO (RM 0-69)	X	X
WILLOW CK NR VALE (RM 0-27)		X
BULLY CK NR VALE (RM 0-24)		X
OWYHEE R NR ADRIAN (RM 0-18)		X
KLAMATH R BELOW KENO (RM 224-250)	X	X
KLAMATH R BELOW KLAMATH FALLS (RM 210-224)	X	X
KLAMATH STRAIT NEAR MIDLAND	X	X
LINK R NR KLAMATH FALLS	X	X
LOST R NR MERRIL (RM 5-65)	X	X
WILLIAMSON R NR CHILOQUIN (RM 0-11)		X

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON ...

Nutrient Standards -- Public Hearing

Date Prepared: October 11, 1985
Hearing Dates: November 18, 1985,
November 25, 1985,
December 3, 1985
Record Closed: December 6, 1985 --
5:00 p.m.

**WHO IS
AFFECTED:**

All residents, businesses, industries and local governments in the State of Oregon.

**WHAT IS
PROPOSED:**

The Department proposes to add nutrient standards to existing Water Quality Standards contained in OAR Chapter 340.

**WHAT ARE THE
HIGHLIGHTS:**

The Department recently conducted its triennial review of the Water Quality Standards contained in OAR Chapter 340, Division 41. Based on this review, the issue of standards which address nutrients and/or nuisance aquatic growth was raised. At the July 17, 1985, Environmental Quality Commission (EQC) meeting, the Department was directed to develop an issue paper which proposes Water Quality Standards for nutrients. This paper was presented at the September 27, 1985, EQC meeting. The Commission directed the Department to take two proposed options out to public hearing.

The first option addresses nuisance growth conditions. A chlorophyll a standard of 0.01 mg/l shall not be exceeded as an average over a three (3) month period. If exceeded, the water body is declared to be in non-attainment. The Department will conduct further study (in accordance with a schedule approved by the Commission) to determine probable causes, beneficial use impacts, control strategy alternatives, or other appropriate actions. Necessary public hearings will be held and a control strategy implemented upon authorization and adoption by the Commission.

The second option addresses nutrients. Specific concentrations for total phosphate phosphorus (as a summer average), nitrate nitrogen and un-ionized ammonia shall not be exceeded. If exceeded, the standard shall become an effluent standard for point source discharges to such water. Best management practices for non-point sources shall be evaluated and revised as necessary to attain compliance. Where standards are not exceeded, increments allocated to new or expanded sources shall not exceed 10 percent of the difference between the ambient level and the standard. Specific standards for individual water bodies may replace the suggested standard.

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.



P.O. Box 1760
Portland, OR 97207

8/16/84

Based on public hearing testimony, the Commission may adopt either option, both options, a combination of the options, modifications of the options or take no further action.

The fiscal and economic impact of adopting nutrient standards could be large and far-reaching. No specific cost estimates are available as they would depend on which nutrient standard option or combination of options is adopted and various characteristics of each specific water body and waste treatment facility. Public comment is invited on the nutrient standard options as well as any projection of fiscal and economic impact.

**HOW TO
COMMENT:**

Public Hearings

- Portland -- November 18, 1985, 1:30 p.m. -- Commission Room,
Department of Fish & Wildlife, 506 SW Mill Street,
Portland, Oregon
- La Grande -- November 25, 1985, 7:00 p.m. -- Room 309,
Hoke, Eastern Oregon State College,
8th & K Avenue, La Grande, Oregon
- Medford -- December 3, 1985, 1:30 p.m. -- Auditorium,
Jackson County Courthouse, Oakdale between
8th and Main, Medford, Oregon

Written comments should be sent to the Department of Environmental Quality, Water Quality Division, P.O. Box 1760, Portland, OR 97207. The comment period will end December 6, 1985, 5:00 p.m.

Any questions or requests for draft rules and background information should be directed to Andy Schaedel, 229-5983 or toll free 1-800-452-4011.

**WHAT IS THE
NEXT STEP:**

After the hearing record has been evaluated, the rules as proposed or revised will be presented for Commission approval.

DEQ

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 rules.

(1) Legal Authority

ORS 468.735 provides that the Commission by rule may establish standards of quality and purity for waters of the state in accordance with the public policy set forth in ORS 468.710. ORS 183.545 requires a review every three (3) years of state agency Administrative Rules to minimize the economic effect these rules may have on businesses. ORS 183.550 requires, among other factors, that public comments be considered in the review and evaluation of these rules.

(2) Need for the Rule

The Environmental Quality Commission, at its September 27, 1985 meeting reviewed a report which presented two possible options for the establishment of nutrient standards. The Commission instructed Department of Environmental Quality staff to hold hearings on both approaches and to also consider testimony for combining all or parts of the approaches. The approaches to nutrient standards are summarized below:

1. Nuisance Aquatic Growth -- Specifies an average chlorophyll a concentration not be exceeded over a three (3) month period. If exceeded, the water body is declared in non-attainment and further studies are conducted to determine causes, beneficial use impacts, control strategies or other appropriate actions.
2. Nutrient Standards -- Specific limits for total phosphate phosphorus, nitrate nitrogen and un-ionized ammonia are established. If exceeded, the limits become an effluent standard for point sources and best management practices are evaluated and revised for non-point sources to attain compliance. Limits are specified for new or expanded sources in attainment areas. Specific standards for individual water bodies may be specified.

Either option, both options, a modification or combination of these options or no action may be taken by the Commission after the hearing record has been evaluated.

(3) Principal Documents Relied Upon in this Rulemaking

Clean Water Act amended in 1981.

Federal Register, Vol 48, No. 217, November 8, 1983, Water Quality Standards Regulation.

Agenda Item No. Q, September 27, 1985, EQC Meeting; Information Report -- Water Quality Standards for Nutrients.

ORS 468.735; ORS 468.710; ORS 183.545; and ORS 183.550.

(4) Fiscal and Economic Impact

Adoption and implementation of nutrient standards could result in increased costs to local governments, small businesses, and individuals for treatment and control of point source and non-point source wastes. Specifically, increased costs for wastewater treatment could be incurred by municipalities, private utilities, and industries to reduce nutrient loadings to surface waters. These costs would break down into two categories: (1) capital construction costs for advanced waste treatment facilities to provide nutrient removal, and (2) increased operating costs.

The possibility of requiring land treatment, thus eliminating a discharge to surface waters exists. The potential costs could be quite significant. No specific cost estimates are available at this time, as they depend on a variety of factors including which nutrient option is chosen and characteristics of specific water bodies and waste treatment facilities.

In addition, increased costs could be incurred by a wide range of individuals and governmental entities for the improvement of management practices. These costs would relate to improving management practices to better control non-point sources of nutrients in the areas of fertilizer applications, erosion control, animal waste management, and storm water drainage.

In summary, the fiscal and economic impact of adopting nutrient standards could be large and far-reaching. The impact is not well defined, as it depends on which nutrient standard option or combination of options is adopted and is water body specific. Public comment on any fiscal and economic impact is welcome and may be submitted in the same manner as indicated for testimony in this notice.

(5) Land Use Consistency

The Department has concluded that the proposal conforms with the Statewide Planning Goals and Guidelines.

Goal 6 (Air, Water and Local Resources Quality): Nutrient standards are designed to improve water in water bodies where nuisance or other deleterious conditions are caused by excessive concentration of nutrients, and to maintain water quality statewide.

Goal 11 (Public Facilities and Services): To attain compliance with nutrient standards, additional costs for capital improvements and operation of wastewater treatment facilities may be incurred depending on which nutrient standard option or combination of options is adopted and on the specific water body. Additional planning to insure timely, orderly and efficient arrangement of facilities to provide needed nutrient removal to meet a standard will be required in many cases.

The rule does not appear to conflict with other Goals.

Public comment on any land use issue involved is welcome and may be submitted in the same manner as indicated for testimony in this notice. It is requested that local, state, and federal agencies review the proposed action and comment on possible conflicts with their programs affecting land use and with Statewide Planning goals within their expertise and jurisdiction.

The Department of Environmental Quality intends to ask the Department of Land Conservation and Development to mediate any appropriate conflicts brought to our attention by local, state or federal authorities.

Andrew L. Schaedel
229-5983
October 11, 1985
WH448.1



Department of Environmental Quality

522 S.W. FIFTH AVENUE, BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. Q, September 27, 1985, EQC Meeting

Information Report -- Water Quality Standards for Nutrients

Background

At the July 17, 1985 meeting, the Commission considered Agenda Item J, Proposed Adoption of Amendments to Water Quality Standards Regulations, OAR Chapter 340, Division 41. As a part of that package, the Department proposed that issue papers be prepared by Spring 1986 for additional potential rule amendments. Potential nutrient standards were included as one proposed issue paper.

Testimony was given by representatives of environmental organizations and the Lake Oswego Corporation requesting immediate adoption of nutrient standards. The testimony suggested that nutrient standards were necessary to protect water quality from excessive algae and plant growth and that sufficient information exists to support adoption of standards. The department indicated that substantial information would have to be assembled but that priorities could be rearranged to accelerate the schedule for nutrient standard development.

A motion was passed by the Commission to direct the staff to come back at the September meeting with a specific idea on how to accelerate the adoption of interim and/or permanent nutrient standards.

The Department has initiated review of the extensive body of literature regarding the development and application of nutrient standards. EPA has sponsored periodic literature reviews which have been summarized in water quality criteria guidance documents as follows:

"Water Quality Criteria", Report of the National Technical Advisory Committee to the Secretary of the Interior, April 1, 1968 (often referred to as the "Green Book").

"Water Quality Criteria 1972", A report of the Committee on Water Quality Criteria, Environmental Studies Board, National Academy of Sciences, National Academy of Engineering, 1972 (often referred to as the "Blue Book").

"Quality Criteria for Water", July 1976, U. S. Environmental Protection Agency (often referred to as the "Red Book").

Since these summary documents were prepared, much more literature has become available which supplements and in some cases contradicts earlier information. More recent documents of particular interest include:

"A Review of the EPA Red Book: Quality Criteria for Water", April 1979, Water Quality Section, American Fisheries Society.

"Summary Analysis of the North American (U. S. Portion) OECD Eutrophication Project: Nutrient Loading - Lake Response Relationships and Trophic State Indices", January 1978, by Walter Rast and G. Fred Lee.

Based on the review of these and other documents to date, this report summarizes general background information on the significance of nutrients in water bodies, reviews possible nutrient control approaches, and recommends an approach toward development of interim standards.

Nutrients and Aquatic Growth

A more detailed discussion of the significance of nutrients in water bodies is presented in Attachment A. The following is a brief summary of that discussion.

The term nutrients applies broadly to those chemicals necessary to support life. However, for the purpose of this discussion, it is limited to forms of phosphorus and nitrogen used in plant growth. These chemicals are most commonly found to either limit aquatic growth when in low concentrations or to stimulate growth when in excess concentrations.

Plants vary as to the amount and kind of nutrient required and the process used to obtain nutrients. For example, rooted aquatic plants can obtain nutrients from the sediment as well as the water column and blue-green algae can obtain nitrogen from the atmosphere. Even with all the nutrients necessary for plant growth present, growth will not take place unless environmental factors such as sunlight, current velocity, temperature and substrate are suitable. Environmental factors necessary for the type of plant community and water body being addressed must be considered in order to properly develop nutrient criteria to control aquatic plant growth. For example, for deep stratified lakes where phosphorus is the limiting nutrient, a load-response relationship has been developed between the total phosphorus loading and the mean depth and retention time in order to predict algal growth.

Nutrient Standards - Background

Several efforts have compiled information on potential pollutant parameters including nutrients. These efforts summarized available literature to

establish criteria upon which water quality standards can be based. The three water quality criteria documents previously cited are examples. The term "criterion" means a designated concentration of a constituent that when not exceeded, will protect an organism, community or a prescribed use or quality with an adequate degree of safety. A criterion may be a narrative statement instead of a constituent concentration. A water quality standard connotes a legal entity for a particular water body or an effluent. Therefore, the criteria were intended as guidelines only, to be used in conjunction with a thorough knowledge of local conditions.

The "red book" is the first criteria document to discuss specific parameter levels for nutrients. Previous criteria documents ("green book" and "blue book") discuss factors that affected recreational and aesthetic values of water. These documents recognized the role of nutrients in eutrophication but no numeric criteria were recommended. Instead, narrative criteria was used to describe nuisance or objectionable conditions and recommendations that waters be virtually free of substances that attribute to these conditions were made. It was stated that "specific numbers would add little to the usefulness of the descriptive recommendations because of the varying acuteness of sensory perception and because of the variability of substances and conditions so largely dependent on local conditions" (USEPA 1972). In essence, the criteria described were developed to protect the beneficial uses of swimming, boating, fishing and aesthetics by addressing nuisance growth rather than factors (such as nutrients) which may cause the growth. These documents recommended maintaining algal growth at natural levels and stressed the desirability of case-by-case studies for assessing the need for management programs. (See Attachment B for further background information). Numeric criteria were recommended for un-ionized ammonia, a toxic form of ammonia, (0.02 mg/l) to protect aquatic life and for Nitrate nitrogen (10.0 mg/l N) to protect public water supply usage.

Most states including Oregon adopted the narrative criteria as part of their water quality standards. Typical language from current Oregon Water Quality Standards address general nuisance conditions as follows:

- (2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Basin...
 - (h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed.

- (i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palability of fish shall not be allowed.
- (j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed.
- (k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed.
- (l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed.

...

In addition, Oregon standards recognize the need to protect lakes and reservoirs from nutrient enrichment due to point sources by prohibiting the discharge of wastes to lakes or reservoirs without EQC approval (340-41-026(4)).

The 1976 "red book" suggested a rationale to support a criterion for consideration for phosphate phosphorus. Total Phosphate as Phosphorus values suggested were:

- 0.025 mg/l - P for lakes or reservoirs
- 0.050 mg/l - P in streams at the point it enters a lake or reservoir
- 0.10 mg/l - P in other flowing waters

A number of exceptions that reduce the affect of phosphorus in lake eutrophy were suggested. These included:

- (1) The role of turbidity or color in reducing growth;
- (2) Lake morphometry factoring into growth response;
- (3) Other nutrients being limiting; and
- (4) Phosphorus control not being sufficiently effective under present technology to make phosphorus limiting.

No discussion of the role of nitrogen in eutrophication was presented. Therefore, no national criteria for nutrients were presented (Attachment C contains pertinent sections from the "red book"). The "red book" retained narrative criteria relating to nuisance conditions and their impact on aesthetic values.

A review of the "red book" criteria for phosphate phosphorus by the American Fishery Society (Attachment D) suggested the "red book" discussion to be simplistic. Specifically, the reliability of predicting water quality problems due to algae based on a phosphorus concentration at one time during the year was questioned. The American Fishery Society recommended an approach using annual phosphorus loading curves relative to the mean depth and retention time of stratified lakes where phosphorus is a limiting nutrient. These loading curves can be related to summer average chlorophyll a values (an indicator of algal cell mass). Chlorophyll a is a parameter commonly used to assess lake eutrophication. The review pointed out the need for additional criteria development for water bodies where algal growth is limited by nitrogen or other elements, by light, or where attached algae or macrophytes are the primary form of aquatic growth.

USEPA has not suggested further nutrient criteria to date. "Red book" criteria modifications have been made on a parameter by parameter basis with most of the work focusing on "toxic" chemicals and suggesting flexible criteria rather than a single numeric guideline. Several states have adopted the rationale suggested for a phosphate phosphorus criteria as part of their water quality standards (See Attachments E and F for a summary of State standards for Phosphorus and Nitrogen, respectively).

The wording of the current Oregon water quality standards does not provide a numerical definition describing "nuisance condition" or a course of action to take upon the identification of such a condition. Essentially, it provides a means of addressing a nuisance condition once it occurs. The phosphorus loading model for stratified lakes appears to be a useful tool, however, it requires site specific study to use it properly. In the absence of a specific standard, chlorophyll a values of either 0.01 or 0.015 mg/l and "red book" total phosphate phosphorus concentrations have been used as screening guidelines to identify potential problem areas where further study is appropriate.

Development of Alternative Standards

Issues associated with the development of standards include:

- (1) Selection of appropriate parameters and parameter values; and
- (2) Description of courses of action to be taken when the standard is not attained (Implementation program).

The Department is suggesting one of two basic approaches to better address nutrients standards at this time. The most significant difference between the approaches lies in implementation actions when the standards are exceeded. The first alternative suggests the adoption of chlorophyll a (0.010 mg/l) as a standard for identifying nuisance growth of phytoplankton (floating algae). The second alternative suggests a standard based on "red book" rationale for total phosphate phosphorus to address nutrient conditions.

In addition, criteria for un-ionized ammonia (aquatic life protection) and nitrate (water supply) are included (See Attachment C for further discussion).

Alternative one suggests a course of action that is somewhat similar to the air quality designation of attainment/non-attainment areas. Upon determination of non-compliance with the standard, the water body is declared to be in non-attainment. Further study is then carried out to determine the extent, probable causes, use impact and to propose control strategies or other appropriate action as part of the implementation plan to be reviewed and adopted by the Commission. The second alternative proposes a fixed course of action that will directly address point and non-point sources of pollution in order to gain compliance. A range of alternatives exists that falls within and between these two approaches.

Specific rule language for the two alternatives is presented next followed by a brief discussion of the rationale, advantages and disadvantages of each.

Alternative No. 1

STANDARDS APPLICABLE TO ALL BASINS

Nuisance Aquatic Growths

340-41-150 The following standard and implementation program shall be applied to lakes, reservoirs and streams to prevent nuisance growths of phytoplankton:

- (1) No wastes shall be discharged and no activities shall be conducted which will cause the level of Chlorophyll a in the waters of the state to exceed an average of 0.01 mg/l measured over any 3 consecutive month period.
- (2) Upon determination by the Department that the standard in Paragraph (1) is exceeded, the Department shall:
 - (a) Declare the appropriate stream reach or water body to be in non-attainment with the standard.
 - (b) In accordance with a schedule approved by the Commission, conduct such studies as are necessary to describe present water quality; determine the probable causes of the standard violation and beneficial use impact; and develop a proposed control strategy for attaining compliance including standards for

additional pollutant parameters, pollutant discharge load limitations, and such other provisions as may be appropriate;

- (c) Conduct necessary public hearings preliminary to adoption of a control strategy and additional standards after obtaining commission authorization;
- (d) Implement the strategy upon adoption by the Commission.

Alternative No. 2

STANDARDS APPLICABLE TO ALL BASINS

Nutrient Standards

340-41-150(1) No wastes shall be discharged and no activities shall be conducted which will cause the average concentrations measured in any three consecutive months (except as noted) for the following nutrients to be exceeded:

- (a) Total phosphate phosphorus in lakes-----0.025 mg/l as P
- (b) Total phosphate phosphorus in streams entering lakes----0.05 mg/l as P
- (c) Total phosphate phosphorus in other streams-----0.1 mg/l as P
- (d) Nitrate nitrogen, (N)-----10.0 mg/l as N
- (e) Un-ionized ammonia (individual value)-----0.02 mg/l

- (2) Upon determination that any of the above standards are exceeded, the standards shall be considered to be effluent standards for point source discharges to such waters. Permits for such discharges shall be modified to incorporate the appropriate standards together with a schedule for implementation. In addition, best management practices for non-point sources shall be evaluated and revised as necessary to attain compliance with the standards.
- (3) Where ambient levels of these nutrients are not exceeded, increments allocated to any new or expanded source shall not exceed 10% of the difference between the ambient level and the standard.
- (4) The standards and implementation program set forth in Paragraphs (1), (2), and (3) above shall be considered interim standards until replaced by specific standards for individual stream reaches or water bodies.

Discussion of Alternative 1

Rationale: Chlorophyll a was selected as the screening parameter to better quantify nuisance growth of phytoplankton. The relationship of chlorophyll a to algae concentrations is reasonably well established and has been used as a basis for lake classification and management schemes.

The concentration was based on work of C. N. Sawyer (1947) and is generally supported by other investigators. Sawyer related the "greenness" of water to chlorophyll a concentrations and found that concentrations of 0.010 mg/l or greater are often associated with water classified as eutrophic and possessing deteriorated water quality for beneficial uses. The three month average was suggested by the department to represent more typical conditions and to limit the influence of short-term blooms found in many lakes in the spring. Many researchers focus on a summer average to represent peak growth and water use conditions. The three-month average would include that period.

The recommended course of action is a further study because specific knowledge of nutrient relationships and loading is needed to develop a compliance strategy. Chlorophyll a is not discharged by sources but is influenced by a variety of factors including nutrient levels and environmental conditions. A procedure of declaring a water body to be in non-attainment, requiring further investigation, development of control strategies or other appropriate provisions and the adoption of the strategy upon hearing and EQC approval would better address the issue of nuisance growth than that currently being followed.

This alternative offers the following advantages:

- It provides a more direct or objective indicator of nuisance phytoplankton conditions than a nutrient value or narrative statement.
- Final control strategy is based on analysis of site specific data which provides reasonable assurance that the required controls will achieve a desired environmental benefit.
- Hearing process assures that ramifications of issues are understood prior to implementation.

Disadvantages include:

- It does not address periphyton or macrophytes (attached growth or rooted vegetation).
- There are limited rationale available for selection of the parameter concentration and averaging method.
- Further study (more data) is required rather than proposing immediate action for compliance.
- The standard does not directly translate to nutrients which are measurable and discharged from point sources.
- Further site specific studies may be resource intensive requiring a longer time period to achieve compliance with the standard.

Discussion of Alternative 2

Rationale: Total phosphate phosphorus concentrations were selected based on "red book" rationale for a criterion to control nuisance aquatic growth. The un-ionized ammonia level was suggested to protect freshwater aquatic life

from toxic affects and the nitrate nitrogen level was suggested to protect water supply use (both red book criteria).

The three-month average for total phosphate phosphorus and nitrate nitrogen was suggested by Department staff to represent more typical conditions. It may be desirable to focus the averaging period to spring and summer conditions, but no rationale for doing this was presented in the red book and this would reduce the potential screening of areas where annual loads are of a concern.

Numeric standards for nutrient parameters lend themselves to a more rigid course of action upon determination of non-compliance. When standards are not achieved, the standard becomes the point source effluent standard so that conditions do not get worse (the receiving water does not offer a dilution alternative). A further investigation of non-point sources is necessary in the case of non-compliance. In the case of compliance, new or expanded point sources are limited to a loading that would not exceed 10% of the difference between the ambient and standard levels. Finally, it is recognized that water bodies differ in their natural nutrient concentrations, therefore the standard is expected to be modified on a specific reach or water body basis.

This alternative offers the following advantages:

- Parameters and values are based on rationale presented in the "red book" (which is easy to reference).
- When a standard is exceeded, allowable discharge concentrations are automatically determined (i.e., the problem translates to a regulatory action).
- The fixed course of action leaves little doubt as to the strategy to achieve compliance.

Disadvantages include:

- There is no universal relationship between nutrient levels and aquatic growth (i.e., high nutrient concentrations do not necessarily produce nuisance aquatic growth).
- Does not address periphyton or macrophyton (attached growth or rooted vegetation).
- Course of action may be overly restrictive or costly and may not achieve environmental benefit (i.e., nutrient removal may be required with no discernable impact on nuisance aquatic growth).
- Standard may not be achievable under any circumstances due to natural conditions.

Discussion

The above alternatives are presented as possible interim standards that could proceed to hearing for possible adoption. Combinations of these alternatives could also be used. For example, nutrient parameter values in

Alternative 2 could be added to Alternative 1 to determine waters which are not in attainment.

A preliminary analysis of ambient river data collected at approximately 100 sites since 1975 showed that 18 sites exceeded the chlorophyll a standard and 57 sites exceeded the total phosphorus standard. All sites exceeding the chlorophyll standard also exceeded the total phosphorus standard. It was interesting to note that the Willamette River exceeded the total phosphorus criteria from Albany to the mouth especially during the high flow months between October and March. The chlorophyll a criteria was barely exceeded at one site in the Portland Harbor. This tends to support the U. S. Geological Survey conclusion that nutrients exceed levels for excessive growth but algal productivity is low and is limited by low light availability and short retention times of the water.

Director's Recommendation:

Based on information developed to date, the department would propose to proceed immediately to public hearing to consider adoption of Alternative 1 as a nuisance aquatic growth standard.

In addition, the department would propose to:

1. Develop an issue paper on nutrients that proposes further additions and refinements to this standard for consideration along with other proposed water quality standard revisions in the spring of 1986.
2. Include advisory language in permits that notifies sources of intended new instream standards and the potential for new requirements.
3. Complete the development of a detailed work plan for data collection and management plan revision for the Tualatin Sub basin and secure funding for the work effort. Data collection should begin by no later than January 1986. Preliminary target for management plan update hearings would be in the spring of 1987.



Fred Hansen

- Attachments:
- A. Significance of Nutrients in Water Bodies
 - B. Excerpts from USEPA 1972 "Blue Book"
 - C. Excerpts from USEPA 1976 "Red Book"
 - D. Excerpts from AFS Review of EPA "Red Book"
 - E. Review of State Standards for Phosphorus
 - F. Review of State Standards for Nitrogen

Andy Schaedel:m
WM568
229-5983
September 16, 1985

ATTACHMENT A

Significance of Nutrients in Water Bodies

When discussing water quality, the term "nutrients" refers to the chemicals necessary to support growth of biological forms in water including algae, fungi, and bacteria. Nutrient chemicals are generally classified as macronutrients, micronutrients (trace elements), and organic nutrients. Macronutrients include carbon, calcium, potassium, magnesium, sodium, sulfur, nitrogen and phosphorus. Of these macronutrients, phosphorus is usually the controlling and controllable nutrient. Micronutrients include silica, manganese, zinc, copper, molybdenum, boron, titanium, chromium, cobalt, and perhaps vanadium. Examples of organic nutrients include biotin, vitamin B-12, thiamine, and glycylglycine.

The variety and quantity of biological species present in a water body will depend on the amounts and kinds of nutrients present in the water body, along with such factors as current, velocity flow, depth, temperature, available sunlight, turbidity and bottom type. A change in any of the conditions present could result in a change in the observed plant communities.

The most common concern with excess nutrients is the occurrence of "nuisance" plant growth that may interfere with the beneficial uses of a water body. Beneficial uses that can be affected include:

swimming, boating, fishing, water supply, animal watering and aesthetics.

Aquatic growth can be divided into three plant communities. These communities are:

- (1) Phytoplankton - community of plants that are generally microscopic and non-motile and thus float with the current, (e.g. suspended algae).
- (2) Periphyton - community of plants that are generally microscopic but are attached to the surfaces of submerged objects; (e.g. attached algae); and
- (3) Macrophyton - community of larger plants that are either attached to the bottom or are free-floating (e.g. rooted aquatic plants, duckweed, lily pads).

Whether or not these communities will exist in bodies of water will depend on physical factors such as current velocity, depth, and bottom substrate. The following table is a general guide of the "nuisance concern for each community as compared to the type of water body.

Relative Concern of Excessive Growth Potential
by Plant Community and Water Body

	<u>Phytoplankton</u>	<u>Periphyton</u>	<u>Macrophyton</u>
Flowing rivers	Low	High	Low
Sluggish rivers	High	Low	Medium
Deep stratified lakes	High	Low	Shallow shoreline areas
Shallow lakes	High	Low	High
Reservoirs	High	Low	Low

(Based on staff assessment and literature review.)

The approach to the development of nutrient standards must consider the plant community and type of water body. A more detailed discussion of nutrient concerns by plant community follows:

Phytoplankton

A comparatively large amount of scientific investigation has been undertaken in an effort to better understand nutrient relationships in lakes. Studies have sought to understand the causes and potential controls of "excessive phytoplankton production" that has accompanied increased urbanization, industrialization, artificial soil fertilization and soil mantle disruption within the drainage basins tributary to lakes.

Lakes have been classified as follows (Trophic Status):

Oligotrophic — low surface-to-volume ratio, a nutrient concentration that supports only a low level of aquatic productivity, a high dissolved oxygen concentration extending to the deep waters, and sediments largely inorganic in composition.

Eutrophic — high surface to volume ratio, an abundance of nutrients producing heavy growth of phytoplankton or macrophyton or both, contains highly organic sediments, and may have seasonal or continuous low dissolved oxygen concentrations in its deeper waters.

Mesotrophic — conditions lie between those of oligotrophic and eutrophic lakes.

Dystrophic — has waters brownish from humic materials, a relatively low pH, a reduced rate of bacterial decomposition, bottom sediments usually composed of partially decomposed vegetation, and low aquatic biomass productivity.

Oligotrophic or nutrient poor lakes are generally poor fish producers compared to mesotrophic or slightly eutrophic lakes. Eutrophic lakes may be unappealing for swimming or other contact recreation.

Nutrients are not the only factors influencing plant growth in lakes. Lake depth, hydraulic residence time, temperature, and solar incidence are among other factors controlling plant production.

An example in Oregon would be the differences between the productivity in Suttle Lake and Blue Lake in the Central Oregon Cascade Mountains. Blue Lake drains into Suttle Lake which in turn drains into Lake Creek and then to the Metolius River. The table below presents comparative information on the two lakes:

Comparison of Selected Data for
Blue and Suttle Lakes in Oregon

	<u>Blue Lake</u>	<u>Suttle Lake</u>
Drainage Basin Area	17 square miles	21 square miles
Lake Area	54 acres	253 acres
Lake Volume	7,600 acre ft.	11,200 acre ft.
Maximum Depth	314 ft.	75 ft.
Average Depth	140 ft.	44 ft.
Retention Time	Not determined.	5.2 years
Water Quality (7/21/82)		
Temperature	59°F	65°F
pH	6.9	8.4
Transparency	52.5 ft.	5.6 ft.
Phosphorous	0.029 mg/l	0.024 mg/l
Nitrate-N	0.02 mg/l	0.02 mg/l
Chlorophyll <u>a</u>	0.002 mg/l	0.016 mg/l
Alkalinity	16 mg/l	15 mg/l
Conductivity	50 umos/cm	50 umos/cm
Dissolved Oxygen	8.2 mg/l	8.3 mg/l
Trophic Status	Oligotrophic	Eutrophic
Temp. Profile	Pronounced Thermal Stratification	Weak Thermal Stratification

If the nutrient (phosphorus) content were the primary factor controlling algal growth, then one would expect the chlorophyll a values and trophic status to be similar for these two lakes.

Studies have with apparent reliability established relationships between mean depth, average hydraulic residence time, and total phosphorus loading in lakes that thermally stratify and phosphorus can be shown to be the nutrient which limits plant growth. In addition, a reasonable relationship has been demonstrated in such cases between phosphorus levels and chlorophyll a (a measure of the relative mass of phytoplankton present).

Using these relationships, a model has been developed to establish a concentration of chlorophyll a in the lake that should not be exceeded to protect the beneficial uses from excessive algae concentrations. It is further possible to estimate the total annual loading of phosphorus that should not be exceeded in order to achieve the objective. It is then necessary to quantify the present total annual loading of phosphorus to the lake, identify the individual sources or source categories contributing the phosphorus, evaluate potential options and costs for limiting or reducing loading for each source or source category, and finally determining whether desired conditions can be achieved. Thus, for a deeper, thermally stratified lake where phosphorus can be shown to be the limiting nutrient, and where total annual nutrient loading levels and sources are known, the tools appear to be available to establish theoretical maximum allowable phosphorus loads. (See Figure 1)

These tools may also apply to reservoirs that thermally stratify. However, the inflow and outflow patterns and the resultant conditions for distribution of nutrients may require modifications of the model.

Shallow lakes do not normally stratify, thus the nutrients in bottom sediments can be recycled for phytoplankton production. Therefore, management approaches and predictive models must take into account the influence of bottom sediments in shallow, unstratified lakes. Much research is currently being carried out on shallow lakes and impoundments but predictive models for establishing nutrient loading relationships have not been completed.

Nutrient impacts on rivers appear to have been studied less than lakes. Potential reasons include a greater lack of control over environmental factors that is desirable in research situations, and a lower occurrence of nuisance algae levels in flowing streams. Nuisance level algae concentrations can occur in very sluggish stream reaches where conditions approach those of shallow unstratified lakes and reservoirs. Predictive relationships between chlorophyll a, physical conditions, or levels of limiting nutrients have not generally been established. Case by case study is necessary to determine the potential for controlling nutrients or other conditions so as to limit algae production.

For example, USGS concluded that the Willamette River had summertime concentrations of nitrogen and phosphorus that exceeded the generally accepted levels for excessive algal growth. However, the productivity of the river was low, with algal communities present that do not form nuisance

conditions. Further testing found that nutrient addition did not affect algal production. USGS suggested that the short retention time and low light availability due to turbidity limited algal growth.

The department has attempted to apply this phosphorus load approach to Lake Oswego. Assuming that the lake stratifies, has a mean depth of 7.8 meters, and a mean residence time of 2.4 months, the maximum permissible loading of phosphorus would be 0.6 grams per square meter per year or 1975 pounds total phosphorus per year. Assuming the total load entered the lake through the diversion canal (an inaccurate assumption), and an annual average inflow through the canal of 70 cubic feet per second, the maximum allowable concentration of total phosphorus would be 0.014 mg/l. The median concentration of phosphorus in the Tualatin at Cherry Grove, above all known waste discharges, is 0.03 mg/l. The median concentration of phosphorus above the USA Rock Creek Plant discharge approaches 0.1 mg/l. Levels below the USA Durham plant discharge and mouth of Fanno Creek approximate 0.25 mg/l. USA is presently removing about 75% of the phosphorus in the influent waste during the summer months by addition of coagulant chemicals in the treatment process.

The above calculations and information raise a number of questions with respect to the Tualatin. Is phosphorus the limiting nutrient so that this approach is applicable? Will a reduction of phosphorus (or other nutrient) yield any noticeable change in algae levels in Lake Oswego? Is it technologically possible to reduce nutrients enough to be of benefit to the lake, particularly since concentrations in the basin headwaters (natural levels) exceed the theoretically allowable concentration? What portions of the phosphorus entering Lake Oswego annually comes from the Tualatin River? What portion comes from the land and development surrounding the lake itself?

What portion recycles from the bottom sediments? For the nutrient in the Tualatin River, what portion comes from point source discharges, urban runoff, agricultural runoff, and natural sources? If the Unified Sewerage Agency diverted 100% of its sewage effluent from the Tualatin basin (pipe it to the Willamette or Columbia River for example), what would be the expected benefit to Lake Oswego algae concentrations? Are there other approaches that could benefit the lake, such as increased inlet flow to reduce residence time, or reduction of nutrients for a limited seasonal period other than that presently required, or some other means? The department believes that significant additional information is needed before a nutrient control strategy for the Tualatin Basin can be established.

Periphyton

Periphyton are most typically a concern in shallow, clear flowing waters where there is a substrate for attachment and sufficient clarity for light penetration. These conditions may exist in shallow lakes, reservoirs and

sluggish rivers. Most research has focused on nuisance periphytic forms (such as Sphaerotilus and Cladophora) which, unlike phytoplankton, show dramatic effects immediately below organic pollution sources. Periphyton abundance and composition are governed by the water quality if proper physical conditions are present.

It is often difficult to collect quantitative samples of periphyton as they are dependent on gaining a representative surface for sampling. Growth on a surface may vary depending on stream canopy, orientation, substrate, velocity, predation, etc. Many studies use artificial substrates which have their own drawbacks. Most studies have focused on identifying general nuisance growth conditions or are site specific intensive surveys. Common water quality measurements, such as water column chlorophyll a or nutrient levels, do not necessarily reflect periphytic concentrations. Unlike phytoplankton, little research has been carried out to suggest a quantifiable level of nuisance growth or nutrient concentrations except in general, but readily discernable (visible), terms. Nuisance growth of periphyton most typically interferes with aesthetics, fish spawning and swimming uses.

Macrophyton

Macrophyton can grow in shallow water (depths up to 10 meters but more typically from 0 to 3 meters) and get much of their nutrient supply from the sediment. Their presence and growth depends on currents, substrate, depth, light and nutrients. They are typically predominant in small ponds, and in shallow lakes and slow moving waters. Rooted aquatic plants can obtain nutrients from the sediment, and will be present regardless of nutrient concentrations in the water column. Increased nutrient levels may increase macrophyte growth since the nutrient loads would likely contribute to the sediment.

Nuisance growth of macrophytes most typically interfere with boating, swimming and fishing uses. Typical water column measurements such as nutrient and chlorophyll a concentrations do not necessarily reflect macrophyten concentrations. Unlike phytoplankton, little work has been carried out to suggest a quantifiable level of nuisance growth or nutrient concentration. In addition, common approaches used in lake management to address macrophyton require manipulation of their environment not nutrient control. Examples are: dredging (Mirror Pond); herbicides (Blue Lake); lake drawdown (Blue Lake); grazing (with Grass Carp); covering of sediments; etc.

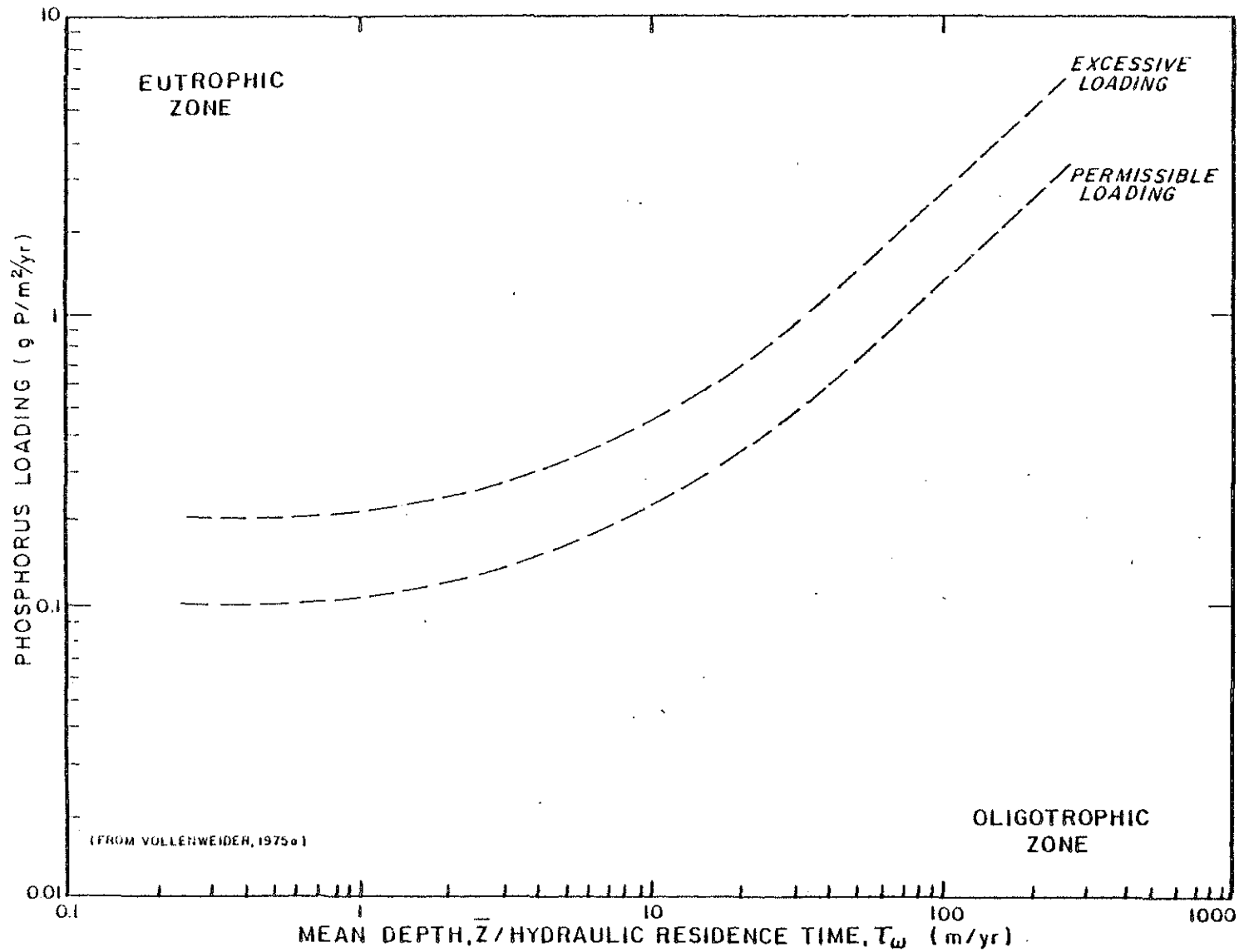


Figure 1. Modified Vollenweider Total Phosphorus Loading and Mean Depth/Hydraulic Residence Time Relationship.

Ref: After Rast and Lee, 1978

WATER QUALITY FOR PRESERVING AESTHETIC VALUES

Aesthetics is classically defined as the branch of philosophy that provides a theory of the beautiful. In this Section attention will be focused on the aesthetics of water in natural and man-made environments and the extent to which the beauty of that water can be preserved or enhanced by the establishment of water quality recommendations.

Although perceptions of many forms of beauty are profoundly subjective and experienced differently by each individual, there is an apparent sameness in the human response to the beauties of water. Aesthetically pleasing waters add to the quality of human experience. Water may be pleasant to look upon, to walk or rest beside, or simply to contemplate. It may enhance the visual scene wherever it appears, in cities or in the wilderness. It may enhance values of adjoining properties, public or private. It may provide a focal point of pride in the community. The perception of beauty and ugliness cannot be strictly defined. Either natural or man-made visual effects may add or detract, depending on many variables such as distance from the observer or the composition and texture of the surroundings. As one writer has said when comparing recreational values with aesthetics, "Of probably greater value is the relaxation and mental well-being achieved by viewing and absorbing the scenic grandeur of the great and restless Missouri. Many people crowd the 'high-line' drives along the bluffs to view this mighty river and achieve a certain restfulness from the proximity of nature" (Porges et al. 1952)¹⁹.

Similarly, aesthetic experience can be enhanced or destroyed by space relationships. Power boats on a two-acre lake are likely to be more hazardous than fun, and the water will be so choppy and turbid that people will hardly enjoy swimming near the shore. On the other hand, a sailboat on Lake Michigan can be viewed with pleasure. If a designated scenic area is surrounded by a wire fence, the naturalness is obviously tainted. If animals can only be viewed in restricted pens, the enjoyment is likely to be less than if they could be seen moving at will in their natural habitat.

MANAGEMENT FOR AESTHETICS

The management of water for aesthetic purposes must be planned and executed in the context of the uses of the land,

the shoreline, and the water surfaces. People must be the ultimate consideration. Aesthetic values relate to accessibility, perspective, space, human expectations, and the opportunity to derive a pleasurable reaction from the senses.

Congress has affirmed and reaffirmed its determination to enhance water quality in a series of actions strengthening the federal role in water pollution control and federal support for water pollution control programs of state and local governments and industry. In a number of states, political leaders and voters have supported programs to protect or even restore water quality with aesthetics as one of the values.

The recognition, identification, and protection of the aesthetic qualities of water should be an objective of all water quality management programs. The retention of suitable, aesthetic quality is more likely to be achieved through strict control of discharges at the source than by excessive dependence on assimilation by receiving waters. Paradoxically, the values that aesthetically pleasing water provide are most urgently needed where pollution problems are most serious as in the urban areas and particularly in the central portions of cities where population and industry are likely to be heavily concentrated.

Unfortunately, one of the greatest unknowns is the value of aesthetics to people. No workable formula incorporating a valid benefit-to-cost ratio has yet been devised to reflect tangible and intangible benefits accruing to conflicting uses or misuses and the cost of providing or avoiding them. This dilemma could be circumvented by boldly stating that aesthetic values are worth the cost of achieving them. The present public reaction to water quality might well support this position, but efforts in this area have not yet proceeded far enough to produce values worthy of wide acceptance. (See Appendix I.)

BASIS OF RECOMMENDATIONS FOR AESTHETIC PURPOSES

All surface waters should be aesthetically pleasing. But natural conditions vary widely, and because of this a series of descriptive rather than numerical recommendations is made. The descriptions are intended to provide, in general terms, for the protection of surface waters from substances or conditions arising from other than natural sources that

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might degrade or tend to degrade the aesthetic quality of the water. Substances or conditions arising from natural sources may affect water quality independently of human activities. Human activities that augment degradation from natural sources, such as accelerated erosion from surface disturbances, are not considered natural. The recommendations are also intended to cover degradation from "discharges or waste," a phrase embracing undesirable inputs from all sources attributable to human activities whether surface flows, point discharges, or subsurface drainages.

The recommendations that follow are essentially finite criteria. The absence of visible debris, oil, scum, and other matter resulting from human activity is a strict requirement for aesthetic acceptability. Similarly, recommended values for objectionable color, odor, taste, and turbidity, although less precise, must be measured as no significant increase over background. Characteristics such as excessive nutrients and temperature elevations that encourage objectionable abundance of organisms, e.g., a bloom of blue-green algae resulting from discharge of a waste with a high nutrient content and an elevated temperature, must be considered.

These recommendations become finite when applied as intended in the context of natural background conditions. Specific numbers would add little to the usefulness of the descriptive recommendations because of the varying acute-

ness of sensory perception and because of the variability of substances and conditions so largely dependent on local conditions.

The phrase "virtually free" of an objectionable constituent as used in the recommendations implies the concept of freedom from the undesirable effects of the constituent but not necessarily freedom from the constituent itself. This recognizes the practical impossibility of complete absence and the inevitability of the presence of potential pollutants to some degree.

Recommendations

Surface waters will be aesthetically pleasing if they are virtually free of substances attributable to discharges or waste as follows:

- materials that will settle to form objectionable deposits;
- floating debris, oil, scum, and other matter;
- substances producing objectionable color, odor, taste, or turbidity;
- substances and conditions or combinations thereof in concentrations which produce undesirable aquatic life.

Snails serving as intermediate hosts include *Lymnaea*, *Physa*, and *Gyraulus* (Cort 1950).⁴³ Although swimmers' itch has wide distribution, in the United States it is principally endemic to the north central lake region. Occasional incidence is reported in marine waters (Strunkard and Hinchliffe 1952).⁶²

About 90 per cent of severe swimmers' itch outbreaks are associated with *Cercaria stagnicolae* shed from varieties of the snail *Lymnaea emarginata*. This relationship is promoted by (1) clean, sandy beaches ideal for swimming and preferred by the snail; (2) peak populations of the snail host that develop in sandy-bottomed lakes of glacial origin; (3) the greatest development of adult snails that do not die off until toward the end of the bathing season; and (4) the cycle of cercarial infection so timed that the greatest numbers of cercariae emerge during the hot weather in the middle of the summer when the greatest amount of bathing is done (Brackett 1941).³⁹ Infected vector snails are also found throughout the United States in swamps, muddy ponds, and ditches; but dermatitis rarely results, because humans seldom use these areas without protective clothing.

In some marine recreational waters jellyfish or sea nettles are serious problems. Some species possess stinging mechanisms whose cnidoblast filaments can penetrate human skin causing painful, inflamed weals. The effects of water quality on their abundance is not known, but Schultz and Cargo (1971)⁶¹ reported that the summer sea nettle, *Chrysaora quinquecirrha*, has been a problem in Chesapeake Bay since colonial days. When these nettles are abundant, swimming is practically eliminated and fishermen's nets and traps are clogged.

Conclusion

The role of water quality in either limiting or augmenting the production of vector and nuisance organisms involves many interrelationships which are not clearly understood. Since organic wastes generally directly or indirectly increase biomass production, there may be an attendant increase in vector or nuisance organisms. Some wastes favor their production by creating water quality or habitat conditions that limit their predators and competitors. Increased production of vector and nuisance organisms may degrade a healthy and desirable human environment and be accompanied by a lessening of recreational and aesthetic values (see the discussion of Aquatic Life and Wildlife in this Section, p. 35.)

EUTROPHICATION AND NUTRIENTS

Man's recent concern with eutrophy relates primarily to lakes, reservoirs, rivers, estuaries, and coastal waters that have been or are being over-fertilized through society's

carelessness to a point where beneficial uses are impaired or threatened. With increasing urbanization, industrialization, artificial soil fertilization, and soil mantle disruption, eutrophication has become a serious problem affecting the aesthetic and recreational enjoyment of many of the nation's waters.

Defining Eutrophication and Nutrients

Lakes have been classified in accordance with their trophic level or bathymetry as eutrophic, oligotrophic, mesotrophic, or dystrophic (National Academy of Sciences 1969,⁹⁷ Russell-Hunter 1970,¹⁰⁵ Warren 1971,¹¹⁴ Stewart and Rohlich 1967).¹⁰⁷ A typical eutrophic lake has a high surface-to-volume ratio, and an abundance of nutrients producing heavy growth of aquatic plants and other vegetation; it contains highly organic sediments, and may have seasonal or continuous low dissolved-oxygen concentrations in its deeper waters. A typical oligotrophic lake has a low surface-to-volume ratio, a nutrient content that supports only a low level of aquatic productivity, a high dissolved-oxygen concentration extending to the deep waters, and sediments largely inorganic in composition. The characteristics of mesotrophic lakes lie between those of eutrophic and oligotrophic lakes. A dystrophic lake has waters brownish from humic materials, a relatively low pH, a reduced rate of bacterial decomposition, bottom sediments usually composed of partially decomposed vegetation, and low aquatic biomass productivity. Dystrophication is a lake-aging process different from that of eutrophication. Whereas the senescent stage in eutrophication may be a productive marsh or swamp, dystrophication leads to a peat bog rich in humic materials but low in productivity.

Eutrophication refers to the addition of nutrients to bodies of water and to the effects of those nutrients. The theory that there is a natural, gradual, and steady increase in external nutrient supply throughout the existence of a lake is widely held, but there is no support for this idea of natural eutrophication (Beeton and Edmondson 1972).⁷⁴ The paleolimnological literature supports instead a concept of trophic equilibrium such as that introduced by Hutchinson (1969).⁹¹ According to this concept the progressive changes that occur as a lake ages constitute an ecological succession effected in part by the change in the shape of the basin brought about by its filling. As the basin fills and the volume decreases, the resulting shallowness increases the cycling of available nutrients and this usually increases plant production.

There are many naturally eutrophic lakes of such recreational value that extensive efforts have been made to control their overproduction of nuisance aquatic plants and algae. In the past, man has often accepted as a natural phenomenon the loss or decreased value of a resource through eutrophication. He has drained shallow, senescent lakes for agricultural purposes or filled them to form building

sites. The increasing value of lakes for recreation, however, will reorder man's priorities, and instead of accepting such alternative uses of lakes, he will divert his reclamation efforts to salvaging and renovating their recreational values.

Artificial or cultural eutrophication results from increased nutrient supplies through human activity. Many aquatic systems have suffered cultural eutrophication in the past 50 years as a consequence of continually increasing nutrient loading from the wastes of society. Man-induced nutrients come largely from the discharge of municipal and industrial wastewaters and from the land runoff effects of agricultural practices and disruption of the soil mantle and its vegetative cover in the course of land development and construction. If eutrophication is not to become the future major deterrent to the recreational and aesthetic enjoyment of water, it is essential that unnatural additions of nutrients be kept out of water bodies through improved wastewater treatment and land management.

Effects of Eutrophication and Nutrients

Green Lake, a lowland lake with high recreation use in Seattle, is an example of a natural eutrophic lake (Sylvester and Anderson 1960),¹⁰⁸ formed some 25,000 years ago after the retreat of the Vashon glacier. During the ensuing years, about two-thirds of the original lake volume was filled with inorganic and organic sediments. A core taken near the center of the lake to a sediment depth of 20.5 feet represented a sediment accumulation over a period of approximately 6,700 years. Organic, nutrient, and chlorophyll analyses on samples from the different sediment depths indicated a relatively constant rate of sedimentation, suggesting that Green Lake has been in a natural state of eutrophy for several thousands of years.

The recreational and aesthetic potential of the lake was reduced for most users by littoral and emergent vegetation and by heavy blooms of blue-green algae in late summer. The aquatic weeds provided harborage for production of mosquitoes and interfered with boating, swimming, fishing, access to the beach, and model boat activities. The heavy, blue-green algal blooms adhered to swimmers. The wind blew the algal masses onto the shore where they decomposed with a disagreeable odor. They dried like a blue-green paint on objects along the shoreline, rendered boating and fishing unattractive, and accentuated water line marks on boats.

Nevertheless, through the continuous addition of low-nutrient dilution water by the City of Seattle (Oglesby 1969),⁹⁸ Green Lake has been reclaimed through a reversal of the trophic development to mesotrophic and is now recreationally and aesthetically acceptable.

Lake Washington is an example of a large, deep, oligotrophic-mesotrophic lake that turned eutrophic in about 35 years, primarily through the discharge of treated and untreated domestic sewage. Even to laymen, the change was rapid, dramatic, and spectacular. In the period of a year, the apparent color of the lake water turned from

bluish-green to rust as a result of massive growths of the blue-green alga, *Oscillatoria rubescens*. This threat to aesthetic and recreational enjoyment was a key factor in voter approval of Metro, a metropolitan sewer district. Metro has greatly reduced the nutrient content of the lake and consequent algal growth by diverting wastewater discharges out of the drainage basin (Edmondson 1969,⁹² 1970).⁹³

Lake Sammamish at the northern inlet of Lake Washington appeared to be responding to the enrichment it received from treated sewage and other nutrient waste, although it had not yet produced nuisance conditions to the extent found in Lake Washington (Edmondson 1970).⁹² However, subsequent diversion of that waste by Metro has resulted in little or no detectable recovery in three years, a period that proved adequate for substantial recovery in Lake Washington (Emery et al. 1972).⁹⁶ Lake Sebasticook, Maine, affords another example of undesirable enrichment. Although previously in an acceptable condition, it became obnoxious during the 1960's in response to sewage and a wide variety of industrial wastes (HEW 1966).¹¹² The nutrient income of Lake Winnisquam, New Hampshire, has been studied to determine the cause of nuisance blooms of blue-green algae (Edmondson 1969).⁹² The well-known lakes at Madison, Wisconsin, including Monona, Waubesa, and Mendota, have been the object of detailed studies of nutrient sources and their deteriorating effect on water quality (Sawyer 1947,¹⁰⁸ Mackenthun et al. 1960,⁹⁶ Edmondson 1961,⁹⁰ 1968).⁹¹

A desirable aspect of eutrophication is the ability of mesotrophic or slightly eutrophic lakes typically to produce greater crops of fish than their oligotrophic or nutrient-poor counterparts. As long as nuisance blooms of algae and extensive aquatic weed beds do not hinder the growth of desirable fish species or obstruct the mechanics and aesthetics of fishing or other beneficial uses, some enrichment may be desirable. Fertilization is a tool in commercial and sport fishery management used to produce greater crops of fish. Many prairie lakes in the east slope foothills of the Rocky Mountains would be classed as eutrophic according to the characteristics discussed below, yet many of these lakes are exceptional trout producers because of the high natural fertility of the prairie (Sunde et al. 1970).¹⁰⁸ As an example of an accepted eutrophic condition, their waters are dense with plankton, but few would consider reducing the enrichment of these lakes.

Streams and estuaries, as well as lakes, show symptoms of over-enrichment, but there is less opportunity for buildup of nutrients because of the continual transport of water. Although aquatic growths can develop to nuisance proportions in streams and estuaries as a result of over-enrichment, manipulation of the nutrient input can modify the situation more rapidly than in lakes.

Man's fertilization of some rivers, estuaries, and embayments has produced undesirable aquatic growths of algae, water weeds, and slime organisms such as *Cladophora*,

Ulua, *Potamogeton*, and *Sphaerntilus*. In addition to interfering with other uses, as in clogging fishing nets with slime (Lincoln and Foster 1943),⁹⁴ the accompanying water-quality changes in some instances upset the natural fauna and flora and cause undesirable shifts in the species composition of the community.

Determination of Trophic Conditions

It should be emphasized that (a) eutrophication has a significant relationship to the use of water for recreational and aesthetic enjoyment as well as the other water uses discussed in this book; (b) this relationship may be desirable or undesirable, depending upon the type of recreational and aesthetic enjoyment sought; and (c) the possible disadvantages or advantages of eutrophication may be viewed subjectively as they relate to a particular water use. There are no generally accepted guidelines for judging whether a state of eutrophy exists or by what criteria it may be measured, such as production of biomass, rate of productivity, appearance, or change in water quality. Ranges in primary productivity and oxygen deficit have been suggested as indicative of eutrophy, mesotrophy, and oligotrophy by Edmondson (1970)⁸³ and Rodhe (1969),¹⁰⁴ but these ranges have had no official recognition.

The trophic state and natural rate of eutrophication that exists, or would exist, in the absence of man's activities is the basis of reference in judging man-induced eutrophication. The determination of the natural state in many water bodies will require the careful examination of past data, referral to published historical accounts, recall by "old-timers," and perhaps the examination of sediment cores for indicator species and chemical composition. The following guidelines are suggested in determining the reference trophic states of lakes or detecting changes in trophic states. Determination of the reference trophic state accompanied by studies of the nutrient budget may reveal that the lake is already in an advanced state of eutrophy. For temperate lakes, a significant change in indicator communities or a significant increase in any of the other four indices, detectable over a five-year period or less, is considered sufficient evidence that accelerated eutrophication is occurring. An undetectable change over a shorter period would not necessarily indicate a lack of accelerated eutrophication. A change detectable only after five years may still indicate unnaturally accelerated eutrophication, but five years is suggested as a realistic maximum for the average monitoring endeavor. Where cultural eutrophication is suspected and changes in indices are not observable, analysis of sediment cores may be necessary to establish the natural state. The dynamic characteristics and individuality of lakes may produce exceptions to these guidelines. They are not infallible indicators of interference with recreation, but for now they may serve as a beginning, subject to modification as more complete data on the range of trophic conditions and their associated effects become available.

Primary Productivity Ranges in the photosynthetic rate, measured by radioactive carbon assimilation, have been suggested by Rodhe (1969)¹⁰⁴ as indicative of trophic conditions (Table I-2).

Biomass Chlorophyll *a* is used as a versatile measure of algal biomass. The ranges presented for mean summer chlorophyll *a* concentration determined in epilimnetic water supplies collected at least biweekly and analyzed according to *Standard Methods* (American Public Health Assoc., American Water Works Assoc., and Water Pollution Control Federation 1971)⁷⁰ are indices of the trophic stage of a lake: oligotrophic, 0-4 mg chlorophyll *a*/m³; eutrophic, 10-100 mg chlorophyll *a*/m³.

These ranges are suggested after reviewing data on chlorophyll concentrations and other indicators of trophic state in several lakes throughout the United States and Canada. Of greatest significance are data from Lake Washington which show that during peak enrichment, mean summer chlorophyll *a* content rose to about 27 mg/m³ and that the lake was definitely eutrophic. The post nutrient diversion summer mean declined to about 7 mg/m³, and the lake is now more typically mesotrophic (Edmondson 1970;⁸³ chlorophyll *a* values corrected to conform to recent analytical techniques). Unenriched and relatively low productive lakes at higher elevations in the Lake Washington drainage basin show mean summer chlorophyll *a* contents of 1 to 2 mg/m³. Moses Lake, which can be considered hypereutrophic, shows a summer mean of 90 mg/m³ chlorophyll *a* (Busin and Welch 1972).⁷⁸

Oxygen Deficit Criteria for rate of depletion of hypolimnetic oxygen in relation to trophic state were reported by Mortimer (1941)⁹⁸ as follows:

<i>oligotrophic</i>	<i>eutrophic</i>
<250 mg O ₂ /m ² /day	>350 mg O ₂ /m ² /day

This is the rate of depletion of hypolimnetic oxygen determined by the change in mean concentration of hypolimnetic oxygen per unit time multiplied by the mean depth of the hypolimnion. The observed time interval should be at least a month, preferably longer, during summer stratification.

TABLE I-2—Ranges in Photosynthetic Rate for Primary Productivity Determinations*

Period	Oligotrophic	Eutrophic
Mean daily rates in a growing season, mgC/m ² /day....	30-100	300-3000
Total annual rates, gC/m ² /year.....	7-75	75-700

* Measured by total carbon uptake per square meter of water surface per unit of time. Productivity estimates should be determined from at least monthly measurements according to *Standard Methods*. American Public Health Association, American Water Works Assoc., and Water Pollution Control Federation 1971; Rodhe 1969.¹⁰⁴

Indicator Communities The representation of certain species in a community grouping in fresh water environments is often a sensitive indicator of the trophic state. Nutrient enrichment in streams causes changes in the size of faunal and floral populations, kinds of species, and numbers of species (Richardson 1928,¹⁰³ Ellis 1937,¹⁰⁴ Patrick 1949,⁹⁹ Tarzwell and Gaufrin 1953¹¹⁰). For example, in a stream typical of the temperate zone in the eastern United States degraded by organic pollution the following shifts in aquatic communities are often found: in the zone of rapid decomposition below a pollution source, bacterial counts are increased; sludgeworms (Tubificidae), rattail maggots (*Eristalis tenax*) and bloodworms (Chironomidae) dominate the benthic fauna; and blue-green algae and the sewage fungus (*Sphaerotilus*) become common (Patrick 1949,⁹⁹ Tarzwell and Gaufrin 1953,¹¹⁰ Patrick et al. 1967¹⁰⁰). Various blue-green algae such as *Schizothrix calcicola*, *Microcoleus vaginatus*, *Microcystis aeruginosa*, and *Anabaena* sp. are commonly found in nutrient-rich waters, and blooms of these and other algae frequently detract from the aesthetic and recreational value of lakes. Diatoms such as *Nitzschia palea*, *Gomphonema parvulum*, *Naniclea cryptocephala*, *Cyclotella meneghiniana*, and *Melosira varians* are also often abundant in nutrient-rich water (Patrick and Reimer 1966).¹⁰¹ Midges, leeches, blackfly larvae, *Physa* snails, and fingernail clams are frequently abundant in the recovery zone.

Nutrients Chemicals necessary to the growth and reproduction of rooted or floating flowering plants, ferns, algae, fungi, or bacteria are considered to be nutrient chemicals. All these chemicals are not yet known, but those that have been identified are classified as macronutrients, trace elements or micronutrients, and organic nutrients. The macronutrients are calcium, potassium, magnesium, sodium, sulfur, carbon and carbonates, nitrogen, and phosphorus. The micronutrients are silica, manganese, zinc, copper, molybdenum, boron, titanium, chromium, cobalt, and perhaps vanadium (Chu 1942,⁷⁷ Arnon and Wessell 1953,⁷² Hansen et al. 1954).⁹⁸ Examples of organic nutrients are biotin, B₁₂, thiamine, and glycylglycine (Droop 1962).⁷⁹ Some of the amino acids and simple sugars have also been shown to be nutrients for heterotrophs or partial heterotrophs.

Plants vary as to the amounts and kinds of nutrients they require, and as a result one species or group of species of algae or aquatic plants may gain dominance over another group because of the variation in concentration of nutrient chemicals. Even though all the nutrients necessary for plant growth are present, growth will not take place unless environmental factors such as light, temperature, and substrate are suitable. Man's use of the watershed also influences the sediment load and nutrient levels in surface waters (Leopold et al. 1964,⁹² Bormann and Likens 1967).⁷⁵

Thomas (1953)¹¹¹ found that the important factor in artificial eutrophication was the high phosphorus content of domestic wastes. Nitrogen became the limiting growth factor if the algal demand for phosphorus was met. Nu-

merous studies have verified these conclusions (American Society of Limnology and Oceanography 1972).⁷¹

Bowyer (1947)¹⁰⁶ determined critical levels of inorganic nitrogen (300 µg/l N) and inorganic phosphorus (10 µg/l P) at the time of spring overturn in Wisconsin lakes. If exceeded, these levels would probably produce nuisance blooms of algae during the summer. Nutrient concentrations should be maximum when measured at the spring overturn and at the start of the growing season. Nutrient concentrations during active growth periods may only indicate the difference between amounts absorbed in biomass (suspended and settled) and the initial amount biologically available. The values, therefore, would not be indicative of potential algal production. Nutrient content should be determined at least monthly (including the time of spring overturn) from the surface, mid-depth, and bottom. These values can be related to water volume in each stratum, and nutrient concentrations based on total lake volume can be derived.

One of the most convincing relationships between maximum phosphate content at the time of lake overturn and eutrophication as indicated by algal biomass has been shown in Lake Washington (Edmondson 1970).⁸² During the years when algal densities progressed to nuisance levels, mean winter PO₄-P increased from 10–20 µg/l to 57 µg/l. Following diversion of the sewage mean PO₄-P decreased once again to the preenrichment level. Correlated with the PO₄-P reduction was mean summer chlorophyll *a* content, which decreased from a mean of 27 µg/l at peak enrichment to less than 10 µg/l, six years after diversion was initiated.

Although difficult to assess, the rate of nutrient inflow more closely represents nutrient availability than does nutrient concentration because of the dynamic character of these nonconservative materials. Loading rates are usually determined annually on the basis of monthly monitoring of water flow, nutrient concentration in natural surface and groundwater, and wastewater inflows.

Vollenweider (1968)¹¹² related nutrient loading to mean depths for various well-known lakes and identified trophic states associated with induced eutrophication. These findings showed shallow lakes to be clearly more sensitive to nutrient income per unit area than deep lakes, because nutrient reuse to perpetuate nuisance growth of algae increased as depth decreased. From this standpoint nutrient loading was a more valid criterion than nutrient concentration in judging trophic state. Examples of nutrient loadings which produced nuisance conditions were about 0.3 g/m²/yr P and 4 g/m²/yr N for a lake with a mean depth of 20 meters, and about 0.8 g/m²/yr P and 11 g/m²/yr N for a lake with a mean depth of 100 meters.

These suggested criteria apply only if other requirements of algal growth are met, such as available light and water retention time. If these factors limit growth rate and the increase of biomass, large amounts of nutrients may move through the system unused, and nuisance conditions may not occur (Welch 1969).¹¹⁵

Carbon (C) is required by all photosynthetic plants. It may be in the form of CO_2 in solution, HCO_3^- , or CO_3^{2-} . Carbamate carboxylate, which may form by the complexing of calcium or other carbonates and amino compounds in alkaline water, is an efficient source of CO_2 (Hutchinson 1967).⁹⁰ Usually carbon is not a limiting factor in water (Goldman et al. 1971).⁸⁸ However, King (1970)⁹² estimated that concentrations of CO_2 less than 3 micromoles at equilibrium favored blue-green algae, and concentrations greater than this favored green algae.

Cations such as calcium, magnesium, sodium, and potassium are required by algae and higher aquatic plants for growth, but the optimum amounts and ratios vary. Furthermore, few situations exist in which these would be in such low supply as to be limiting to plants. Trace elements either singly or in combination are important for the growth of algae (Goldman 1964).⁸⁶ For example molybdenum has been demonstrated to be a limiting nutrient in Castle Lake. Deficiencies in trace elements are more likely to occur in oligotrophic than in eutrophic waters (Goldman 1972).⁸⁷

The vitamins important in promoting optimum growth in algae are biotin, thiamin, and B_{12} . All major groups require one or more of these vitamins, but particular species may or may not require them. As Provasoli and D'Agostino (1969)¹⁰² pointed out, little is known about the requirement for these vitamins for growth of algae in polluted water.

Under natural conditions it is difficult to determine the effect of change in concentrations of a single chemical on the growth of organisms. The principal reasons are that growth results from the interaction of many chemical, physical, and biological factors on the functioning of an organism; and that nutrients arise from a mixture of chemicals from farm, industrial, and sanitary wastes, and runoff from fields. However, the increase in amounts and types of nutrients can be traced by shifts in species forming aquatic communities. Such biotic shifts have occurred in western Lake Erie (Beeton 1969).⁷⁵ Since 1900 the watershed of western Lake Erie has changed with the rapidly increasing human population and industrial development, as a result of which the lake has received large quantities of sanitary, industrial, and agricultural organic wastes. The lake has become modified by increased concentrations of dissolved solids, lower transparency, and low dissolved oxygen concentration. Blooms of blue-green algae and shifts in invertebrate populations have markedly increased in the 1960's (Davis 1964,⁷⁸ Beeton 1969).⁷³

Summary of Measurement of Nutrient Enrichment

Several conditions can be used to measure nutrient enrichment or its effects:

- a steady decrease over several years in the dissolved oxygen content of the hypolimnion when measured prior to fall overturn, and an increase in anaerobic areas in the lower portion of the hypolimnion;

- an increase in dissolved materials, especially nutrients such as nitrogen, phosphorus, and simple carbohydrates;
- an increase in suspended solids, especially organic materials;
- a shift in the structure of communities of aquatic organisms involving a shift in kinds of species and relative abundances of species and biomass;
- a steady though slow decrease in light penetration;
- an increase in organic materials and nutrients, especially phosphorus, in bottom deposits;
- increases in total phosphorus in the spring of the year.

Recommendations

The principal recommendations for aesthetic and recreational uses of lakes, ponds, rivers, estuaries, and near-shore coastal waters are that these uses continue to be pleasing and undiminished by effects of cultural activities that increase plant nutrients. The trophic level and natural rate of eutrophication that exists, or would exist, in these waters in the absence of man's activities is considered the reference level and the commonly desirable level to be maintained. Such water should not have a demonstrable accelerated production of algae growth in excess of rates normally expected for the same type of waterbody in nature without man-made influences.

The concentrations of phosphorus and nitrogen mentioned in the text as leading to accelerated eutrophication were developed from studies for certain aquatic systems: maintenance of lower concentrations may or may not prevent eutrophic conditions. All the factors causing nuisance plant growths and the level of each which should not be exceeded are not known. However, nuisance growths will be limited if the addition of all wastes such as sewage, food processing, cannery, and industrial wastes containing nutrients, vitamins, trace elements, and growth stimulants are carefully controlled and nothing is added that causes a slow overall decrease of average dissolved oxygen concentration in the hypolimnion and an increase in the extent and duration of anaerobic conditions.

AQUATIC VASCULAR PLANTS

Aquatic vascular plants affect water quality, other aquatic organisms, and the uses man makes of the water. Generally, the effects are inversely proportional to the volume of the water body and directly proportional to the use man wishes to make of that water. Thus the impact is often most significant in marshes, ponds, canals, irrigation ditches, rivers, shallow lakes, estuaries and embayments, public water supply sources, and man-made impoundments. Dense

growths of aquatic vascular plants are not necessarily due to human alteration of the environment. Where an appropriate environment for plant growth occurs, it is extremely difficult to prevent the growth without changing the environment. Addition of plant nutrients can cause aquatic vascular plants to increase to nuisance proportions in waters where natural fertility levels are insufficient to maintain dense populations (Lind and Cottam 1969).¹⁴⁷ In other waters where artificial nutrient additions are not a problem, natural fertility alone may support nuisance growths (Frink 1967).¹⁴⁸

Interrelationships With Water Quality

Through their metabolic processes, manner of growth, and eventual decay, aquatic vascular plants can have significant effects on such environmental factors as dissolved oxygen and carbon dioxide, carbonate and bicarbonate alkalinity, pH, nutrient supplies, light penetration, evaporation, water circulation, current velocity, and sediment composition. The difficulty in understanding the interrelationships among plant growth and water quality is described in part by Lathwell et al. (1969).¹⁴⁴ Diurnal oxygen rhythm with maximum concentrations in the afternoon and minimums just before dawn is a universally-recognized limnological phenomenon, and metabolic activities of vascular plants can contribute to these rhythms. The effect of aquatic plants on dissolved oxygen within a reach of stream at a particular time of day is a function of the plant density and distribution, plant species, light intensity, water depth, turbidity, temperature, and ambient dissolved oxygen. Oxygen production is proportional to plant density only to a certain limit; when this limit is exceeded, net oxygen production begins to decrease and, with increasing density, the plants become net oxygen consumers (Owens et al. 1969).¹⁵⁰ It is hypothesized that this phenomenon occurs because the plants become so dense that some are shaded by other overlying plants. Westlake (1966)¹⁷³ developed a model for predicting the effects of aquatic vascular plant density and distribution on oxygen balance which demonstrates that if the weeds are concentrated within a small area, the net effect of the weeds may be to consume more oxygen than that produced, even though the average density may be relatively low.

After reviewing the literature on the direct effects of plants on the oxygen balance, Sculthorpe (1967)¹⁶² concluded that the extent of oxygen enrichment at all sites varies with changing light intensity, temperature, and plant population density and distribution. On a cloudy, cool day community respiration may exceed even the maximum photosynthetic rate. Although vigorous oxygen production occurs in the growing season, the plants eventually die and decay, and the resulting oxygen consumption is spread over the cooler seasons of the year.

Light penetration is significantly reduced by dense stands of aquatic vascular plants, and this reduces photosynthetic

rates at shallow depths. Buscemi (1958)¹⁵⁹ found that under dense beds of *Elodea* the dissolved oxygen concentration fell sharply with depth and marked stratification was produced. Severe oxygen depletion under floating mats of water hyacinth (Lynch et al. 1947),¹⁵⁰ duckweed and water lettuce (Yount 1963)¹⁷⁰ have occurred. Extensive covers of floating or emergent plants shelter the surface from the wind, reduce turbulence and reaeration, hinder mixing, and promote thermal stratification. Dense growths of phytoplankton may also shade-out submerged macrophytes, and this phenomenon is used to advantage in fisheries pond culture. Fertilization of ponds to promote phytoplankton growth is recommended as a means of reducing the standing crop of submerged vascular plants (Swingle 1947,¹⁶⁷ Surber 1961¹⁶⁶).

Interrelationships of plants with water chemistry were reported by Straskraba (1965)¹⁶⁸ when foliage of dense populations of *Nuphar*, *Ceratophyllum*, and *Myriophyllum* were aggregated on the surface. He found pronounced stratification of temperature and chemical factors and reported that the variations of oxygen, pH, and alkalinity were clearly dependent on the photosynthesis and respiration of the plants. Photosynthesis also involves carbon dioxide, and Sculthorpe (1967)¹⁶² found that for every rise of 2 mg/l of dissolved oxygen the total carbon dioxide should drop 2.75 mg/l and be accompanied by a rise in the pH. A rise in pH will allow greater concentrations of un-ionized ammonia (see *Freshwater Aquatic Life*, p. 140).

Hannan and Anderson (1971)¹⁵⁷ studied diurnal oxygen balance, carbonate and bicarbonate alkalinity and pH on a seasonal basis in two Texas ponds less than 1 m deep which supported dense growths of submerged rooted macrophytes. One pond received seepage water containing free carbon dioxide and supported a greater plant biomass. This pond exhibited a diurnal dissolved-oxygen range in summer from 0.8 to 16.4 mg/l, and a winter range from 0.3 to 18.0 mg/l. The other pond's summer diurnal dissolved-oxygen range was 3.8 to 14.9 mg/l and the winter range was 8.3 to 12.3 mg/l. They concluded that (a) when macrophytes use bicarbonate as a carbon source, they liberate carbonate and hydroxyl ions, resulting in an increase in pH and a lowered bicarbonate alkalinity; and (b) the pH of a macrophyte community is a function of the carbon dioxide-bicarbonate-carbonate ionization phenomena as altered by photosynthesis and community respiration.

Dense colonies of aquatic macrophytes may occupy up to 10 per cent of the total volume of a river and reduce the maximum velocity of the current to less than 75 per cent of that in uncolonized reaches (Hillebrand 1950,¹³⁹ as reported by Sculthorpe 1967¹⁶²). This can increase sediment deposition and lessen channel capacity by raising the substrate, thus increasing the chance of flooding. Newly deposited silt may be quickly stabilized by aquatic plants, further affecting flow.

Loss of water by transpiration varies between species and

growth forms. Otis (1914)¹⁵⁸ showed that the rate of transpiration of *Nymphaea odorata* was slightly less than the rate of evaporation from a free water surface of equivalent area, but that of several emergent species was up to three times greater. Sculthorpe (1967)¹⁶² postulated that transpiration from the leaves of free-floating rosettes could be at rates six times greater than evaporation from an equivalent water surface. Loss of water through water hyacinth was reported by Das (1969)¹²³ at 7.8 times that of open water.

Interrelationships With Other Biota

Aquatic macrophytes provide a direct or indirect source of food for aquatic invertebrates and fish and for wildlife. The plants provide increased substrate for colonization by epiphytic algae, bacteria, and other microorganisms which provide food for the larger invertebrates which, in turn, provide food for fish. Sculthorpe (1967)¹⁶² presented a well-documented summary of the importance of a wide variety of aquatic macrophytes to fish, birds, and mammals. Sago pondweed (*Potamogeton pectinatus*) illustrates the opposite extreme in man's attitude toward aquatic macrophytes: Timmons (1966)¹⁶⁸ called it the most noxious plant in irrigation and drainage ditches of the American west, whereas Martin and Uhler (1939)¹⁵⁵ considered it the most important duck food plant in the United States.

Aquatic vegetation and flotsam breaking the water surface enhance mosquito production by protecting larvae from wave action and aquatic predators and interfering with mosquito control procedures. Two major vectors of malaria in the United States are *Anopheles quadrimaculatus* east of the Rocky Mountains, and *A. freeborni* to the west (Carpenter and La Casse 1955).¹³⁰ Anopheline mosquitoes are generally recognized as permanent pool breeders. The more important breeding sites of these two mosquitoes are freshwater lakes, swamps, marshes, impoundment margins, ponds, and seepage areas (Carpenter and La Casse 1955).¹³⁰ The role of various aquatic plant types in relation to the production and control of *A. quadrimaculatus* on artificial ponds and reservoirs indicates that the greatest problems are created by macrophytes that are (1) free-floating, (2) submersed and anchored but which break the water surface, (3) floating leaf anchored, and (4) emerged floating-mat anchored (U.S. Department of Health, Education, and Welfare, Public Health Service, and Tennessee Valley Authority 1947).¹⁶⁹ In addition to vector mosquitoes, pestiferous mosquitoes develop in association with plant parts in shoreline areas. Jenkins (1964)¹⁴² provided an annotated list and bibliography of papers dealing with aquatic vegetation and mosquitoes.

Generally, submersed vascular plants have lower nutrient requirements than filamentous algae or phytoplankton (Mulligan and Baranowski 1969).¹⁶⁷ Plants with root systems in the substrate do not have to compete with phytoplankton, periphyton, or non-rooted macrophytes for the phosphorus in the sediments.

Boyd (1971b),¹²⁶ relating his earlier work on emergent species (Boyd 1969,¹²² 1970a,¹²³ 1971a¹²⁵) to that of Stake (1967,¹⁶³ 1968¹⁶⁴) on submersed species, stated that in the southern United States most of the total net nutrient accumulation by aquatic vascular plants occurs by midspring before peak dry matter standing crop is reached, and that nutrients stored during early spring growth are utilized for growth later. Thus nutrients are removed from the environment early in the season, giving the vascular hydrophytes a competitive advantage over phytoplankton. Boyd (1967)¹²¹ also reported that the quantity of phosphorus in aquatic plants frequently exceeds that of the total water volume. These phenomena may account for the high productivity in terms of macrophytes which can occur in infertile waters. However, if the dissolved phosphorus level is not a limiting factor for the phytoplankton, the ability to utilize sediment phosphorus is not a competitive advantage for rooted plants.

Further interaction between aquatic vascular plants and phytoplankton has been demonstrated recently in studies showing that concentrations of dissolved organic matter can control plant growth in lakes by regulating the availability of trace metals and other nutrients essential to plant photosynthesis. An array of organic-inorganic interactions shown to suppress plant growth in hardwater lakes (Wetzel 1969,¹⁷⁴ 1971¹⁷⁵) appear to operate in other lake types and streams (Breger 1970,¹²⁷ Malcolm et al. 1970,¹⁶⁵ Allen 1971¹¹⁶). Wetzel and Allen in press (1971)¹⁷⁶ and Wetzel and Manny (1972)¹⁷⁷ showed that aquatic macrophytes near inlets of lakes can influence phytoplankton growth by removing nutrients as they enter the lake while at the same time producing dissolved organic compounds that complex with other nutrients necessary to phytoplankton growth. Manny (1971,¹⁶² 1972¹⁶⁴) showed several mechanisms by which dissolved organic nitrogen (DON) compounds regulate plant growth and rates of bacterial nutrient regeneration. These control mechanisms can be disrupted by nutrients from municipal and agricultural wastes and dissolved organic matter from inadequately treated wastes.

Effects on Recreation and Aesthetics

It is difficult to estimate the magnitude of the adverse effects of aquatic macrophytes in terms of loss of recreational opportunities or degree of interference with recreational pursuits. For example, extensive growths of aquatic macrophytes interfere with boating of all kinds; but the extent of interference depends, among other things, on the growth form of the plants, the density of the colonization, the fraction of the waterbody covered, and the purposes, attitudes, and tolerance of the boaters. Extremes of opinion on the degree of impact create difficulty in estimating a monetary, physical, or psychological loss.

Dense growths of aquatic macrophytes are generally objectionable to the swimmer, diver, water skier, and scuba enthusiast. Plants or plant parts can be at least a nuisance to swimmers and, in extreme cases, can be a factor in

drowning. Plants obstruct a diver's view of the bottom and underwater hazards, and fronds can become entangled in a scuba diver's gear. Water skiers' preparations in shallow water are hampered by dense growths of plants, and fear of falling into such growths while skiing detracts from enjoyment of the sport.

Rafts of free-floating plants or attached plants which have been dislodged from the substrate often drift onto beaches or into swimming areas, and time and labor are entailed in restoring their attractiveness. Drying and decaying aquatic plants often produce objectionable odors and provide breeding areas for a variety of insects.

Sport fishermen have mixed feelings about aquatic macrophytes. Fishing is often good around patches of lily pads, over deeply-submerged plants, and on the edges of beds of submerged weeds which rise near the surface. On the other hand, dense growths may restrict the movement and feeding of larger fish and limit the fishable area of a waterbody. Aquatic plants entangle lures and baits and can prevent fishermen from reaching desirable fishing areas.

Marshes and aquatic macrophytes in sparse or moderate densities along watercourse and waterbody margins augment nature study and shoreline exploration and add to the naturalistic value of camping and recreation sites. It is only when the density of the growths, or their growth forms, become a nuisance and interfere with man's activities that he finds them objectionable. An indication of how often that occurs is provided by McCarthy (1961),¹⁵⁶ who reported that on the basis of a questionnaire sent to all states in 1960, there were over 2,000 aquatic vegetation control projects conducted annually, and that most states considered excessive growth of aquatic vegetation a serious and increasing problem.

The aesthetic value of aquatic macrophytes is in the mind of the beholder. The age-old appeal of aquatic plants is reflected in their importance as motifs in ancient architecture, art, and mythology. Aquatic gardens continue to be popular tourist attractions and landscaping features, and wild aquatic plant communities have strong appeal to the artist, the photographer, and the public. To many, these plants make a contribution of their own to the beauty of man's environment.

Control Considerations

Aquatic vascular plants can be controlled by several methods: chemical (Hall 1961,¹⁵⁸ Little 1968¹⁴⁸); biological (Avault et al. 1968,¹¹⁷ Maddox et al. 1971,¹⁵¹ Blackburn et al. 1971¹⁵⁰); mechanical (Livermore and Wunderlich 1969¹⁴⁹); and naturalistic environmental manipulation (Penfound 1953).¹⁶⁰ General reviews of control techniques have been made by Holm et al. (1969),¹⁴¹ Sculthorpe (1967),¹⁶² and Lawrence (1968).¹⁴⁶

Harvesting aquatic vascular plants to reduce nutrients as a means of eutrophication control has been investigated

by Boyd (1970b),¹²⁶ Yount and Crossman (1970),¹⁷¹ and Peterson (1971).¹⁶¹ Although many investigators have reported important nutrients in various aquatic plants, the high moisture content of the vegetation as it is harvested has been an impediment to economic usefulness. Peterson (1971)¹⁶¹ reported the cost per pound of phosphorus, nitrogen, and carbon removed from a large lake supporting dense growths of aquatic vascular plants as \$61.19, \$8.24 and \$0.61 respectively.

Nevertheless, improved methods of harvesting and processing promise to reduce the costs of removing these bothersome plants and reclaiming their nutrients for animal and human rations or for soil enrichment. Investigation into the nutritive value of various aquatic plants has frequently been an adjunct of research on the efficiency and economy of harvesting and processing these plants in an effort to remove nuisance growth from lakes and streams. Extensive harvesting of aquatic vegetation from plant-clogged Caddo Lake (Texas-Louisiana) was followed by plant analysis and feeding trials. The dehydrated material was found to be rich in protein and xanthophyll (Creger et al. 1963,¹³² Couch et al. 1963¹³¹). Bailey (1965)¹¹⁸ reported an average of 380 milligrams of xanthophyll per pound of vacuum oven-dried aquatic plant material with about 19 per cent protein. Hentges (1970),¹³⁸ in cooperation with Bagnall (1970),¹¹⁹ in preliminary tests with cattle fed press-dehydrated aquatic forage, found that pelleted *Hydrilla verticillata* (Florida elodea) could be fed satisfactorily as 75 per cent of a balanced ration. Bruhn et al. (1971)¹²³ and Koegel et al. (1972)¹⁴³ found 44 per cent mineral and 21 per cent protein composition in the dry matter of the heat coagulum of the expressed juice of Eurasian water milfoil (*Myriophyllum spicatum*). The press residue, further reduced by cutting and pressing to 16 per cent of the original volume and 32 per cent of the original weight, could readily be spread for lawn or garden mulch.

Control measures are undertaken when plant growth interferes with human activities beyond some ill-defined point, but too little effort has been expended to determine the causes of infestations and too little concern has been given the true nature of the biological problem (Boyd 1971b).¹²⁶ Each aquatic macrophyte problem under consideration for control should be treated as unique, the biology of the plant should be well understood, and all the local factors thoroughly investigated before a technique is selected. Once aquatic macrophytes are killed, space for other plants becomes available. Nutrients contained in the original plants are released for use by other species. Long-term control normally requires continued efforts. Herbicides may be directly toxic to fish, fish eggs, or invertebrates important as fish food (Eipper 1959,¹³⁴ Walker 1965,¹⁷² Hiltibran 1967).¹⁴⁰ (See the discussion of Pesticides, pp. 182-186, in Section III.) On man-made lakes, reservoirs and ponds the potential for invasion by undesirable aquatic

plants may be lessened by employing naturalistic methods which limit the available habitat and requirements of particular species. It is difficult to predict what biotic form will replace the species eliminated. Boyd (1971b)¹²⁸ states that in some Florida lakes, herbicide applications have upset the balance between rooted aquatics and phytoplankton, resulting in nuisance phytoplankton blooms that were sometimes more objectionable than the original situation.

Control of aquatic vascular plants can be a positive factor in fisheries management (Leonard and Cain 1961);¹⁴⁶ but when control projects are contemplated in multi-purpose waters, consideration should be given to existing interdependencies between man and the aquatic community. For example: what biomass of aquatic vascular plants is necessary to support waterfowl; what biomass will permit boating; what is a tolerable condition for swimming; must the shoreline be clear of plants for wading; will shore erosion increase if the shoreline vegetation is removed? The interference of aquatic vascular plant communities in human activities should be controlled with methods that stop short of attempted plant eradication.

Recommendation

The complex interrelationships among aquatic vascular plants, associated biota, water quality, and the activities of humans call for case-by-case evaluation in assessing the need for management programs. If management is undertaken, study of its potential impacts on the aquatic ecosystem and on various water uses should precede its implementation.

INTRODUCTION OF SPECIES

Extent and Types of Introductions

Purposeful or accidental introductions of foreign aquatic organisms or transplantations of organisms from one drainage system to another can profoundly influence the aesthetic appeal and the recreational or commercial potential of affected waterbodies. The introduction of a single species may alter an entire aquatic ecosystem (Lachner et al. 1970).¹⁸⁸ An example of extreme alteration occurred with the invasion of the Great Lakes by the sea lamprey (*Petromyzon marinus*) (Moffett 1957,¹⁹⁰ Smith 1964¹⁹⁷). Introduced and transplanted species account for about half of the fish fauna of Connecticut (Whitworth et al. 1968),¹⁹⁹ California (Shapovalov et al. 1959),¹⁹⁵ Arizona, and Utah (Miller 1961).¹⁸⁹ The nature of the original aquatic fauna is obscured in many cases, and some indigenous species have been adversely affected through predation, competition, hybridization, or alteration of habitat by the introduced species. Exotics that have established reproducing populations in the United States (exclusive of the Hawaiian

Islands) include 25 species of fish (Lachner et al. 1970),¹⁸⁸ more than 50 species of land and aquatic mollusks (Abbott 1950),¹⁷⁸ and over 20 species of aquatic vascular plants (Hotchkiss 1967)¹⁸⁵ in addition to aquatic rodents, reptiles, amphibians, insects, and crustaceans.

Growths of native aquatic vascular plants and a variety of exotic species commonly interfere with recreation and fishing activities (see p. 25) and a variety of other water uses including industrial and agricultural use (Holm et al. 1969,¹⁸⁴ Sculthorpe 1967).¹⁹⁴ Water hyacinth (*Eichhornia crassipes*) caused loss of almost \$43 million through combined deleterious effects in Florida, Alabama, Mississippi, and Louisiana in 1956 (Wunderlich 1962).²⁰⁰ Penfound and Earle (1948)¹⁹² estimated that the annual loss caused by water hyacinth in Louisiana before the growths were brought under control averaged \$5 million and in some years reached \$15 million. Water chestnut (*Trapa natans*) produced beds covering 10,000 acres within ten years of its introduction near Washington, D.C. (Rawls 1964).¹⁹³ The beds blocked navigation and provided breeding sites for mosquitoes, and their hard spined seed cases on the shorelines and bottom were a serious nuisance to swimmers, waders, and people walking the shores. Eurasian milfoil (*Myriophyllum spicatum*) infested 100,000 acres in Chesapeake Bay. The plants blocked navigation, prevented recreational boating and swimming, interfered with seafood harvest, increased siltation, and encouraged mosquitoes (Cronin 1967).¹⁸²

Invertebrate introductions include the Asian clam (*Corbicula manilensis*), a serious pest in the clogging of industrial and municipal raw water intake systems and irrigation canals (Sinclair 1971),¹⁹⁶ and an oriental oyster drill (*Tritonalia japonica*) considered the most destructive drill in the Puget Sound area (Korringa 1952).¹⁸⁷

Some Results of Introductions

Some introductions of exotics, e.g., brown trout (*Salmo trutta*), and some transplants, e.g., striped bass (*Morone saxatilis*) from the Atlantic to the Pacific and coho salmon (*Oncorhynchus kisutch*) from the Pacific to the Great Lakes, have been spectacularly successful in providing sport and commercial fishing opportunities. Benefits of introductions and transplantations of many species in a variety of aquatic situations are discussed by several authors in *A Century of Fisheries in North America* (Benson 1970).¹⁷⁹

The success of other introductions has been questionable or controversial. In the case of carp (*Cyprinus carpio*), the introduction actually decreased aesthetic values because of the increased turbidity caused by the habits of the carp. The increased turbidity in turn decreased the biological productivity of the waterbody. The presence of carp has lowered the sportfishing potential of many waterbodies because of a variety of ecological interactions. The grass carp or white amur (*Ctenopharyngodon idella*), a recent impor-

QUALITY CRITERIA FOR WATER

QUALITY CRITERIA FOR WATER

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Washington, D.C. 20460

OFFICE OF WATER AND
HAZARDOUS MATERIALS

To the Reader:

Thousands of fine scientists throughout the country have contributed directly or indirectly to this publication of "Quality Criteria for Water." This volume represents a stocktaking effort on the part of this Agency to identify as precisely as possible at this time, on a national scale, the various water constituents that combine to form the concept of "Quality Criteria for Water." This process of definition will continue far into the future because research related to water quality is a never-ending evolutionary process, and the water environment is so complex that man's efforts to define it will never attain finite precision.

Water quality criteria do not have direct regulatory use, but they form the basis for judgment in several Environmental Protection Agency and State programs that are associated with water quality considerations. The criteria presented in this publication should not be used as absolute values for water quality. As stated in the chapter on "The Philosophy of Quality Criteria," variability exists in the natural quality of water and certain organisms become adapted to that quality, which may be considered extreme in other areas. These criteria represent scientific judgments based upon literature and research about the concentration-effect relationship of a particular water quality constituent to a particular aquatic species within the limits of experimental investigation. They should be used with considered judgment and with an understanding of their development. The judgment associated with their use should include the natural quality of water under consideration, the kinds of organisms that it contains, the association of those species to the particular species described in this volume upon which criteria values have been placed, and the local hydrologic conditions.

It must be emphasized that national criteria can never be developed to meet the individual needs of each of the Nation's waterways—the natural variability within the aquatic ecosystem can never be identified with a single numerical value. Water quality criteria will change in the future as our knowledge and perception of the intricacies of water improve. There is no question but that criteria for some constituents will change within a period of only two years based upon research now in progress. That is a mark of continuing progressive research effort, as

well as a mark of a better understanding by man of the environment that he inhabits.

This, then, is the challenge for the future: to expand upon our present baseline of knowledge of the cause-effect relationships of water constituents to aquatic life and of the antagonistic and synergistic reactions among many quality constituents in water; and to mold such future knowledge into realistic, environmentally protective criteria to insure that the water resource can fulfill society's needs.



ECKARDT C. BECK
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and Standards

PHOSPHORUS

CRITERION

0.10 ug/l yellow (elemental) phosphorus for marine or estuarine waters.

INTRODUCTION

Phosphorus in the elemental form is particularly toxic and is subject to bioaccumulation in much the same way as mercury. Phosphorus as phosphate is one of the major nutrients required for plant nutrition and is essential for life. In excess of a critical concentration, phosphates stimulate plant growth. During the past 30 years, the belief has developed that increased standing crops of aquatic plants frequently are caused by increased supplies of phosphorus. Such phenomena are associated with a condition of accelerated eutrophication or aging of waters. Generally, it is recognized that phosphorus is not the sole cause of eutrophication but there is evidence that frequently it is the key element required by freshwater plants, and generally, is present in the least amount relative to need. Therefore, an increase in phosphorus allows use of other already present nutrients for plant growth. Further, of all of the elements required for plant growth in the water environment, phosphorus is the most easily controlled by man.

Large deposits of phosphate rock are found near the western shore of central Florida, as well as in a number of other states. Deposits in Florida are found in the form of pebbles which vary in size from fine sand to about the size of a human foot. These pebbles are embedded in a matrix of clay and sand. The phosphate rock beds lie within a few feet of the surface and mining is accomplished by use of hydraulic water jets and a washing operation that separates the phosphate from waste materials. The process is similar to that of strip-mining. Florida, Idaho, Montana, North Carolina, South Carolina, Tennessee, Utah, Virginia, and Wyoming share phosphate mining activities.

Phosphates enter waterways from several different sources. The human body excretes about 1 pound per year of phosphorus expressed as "P." The use of phosphate detergents and other domestic phosphates increases the per capita contribution to about 3½ pounds per year of phosphorus as P. Some industries, such as potato processing, have wastewaters high in phosphates. Varying amounts of phosphorus drain to watercourses from the land. This drainage may be surface runoff of rainfall, effluent from tile lines, or return flow from irrigation. Cattle feedlots, concentrations of domestic duck or wild duck populations, and tree leaves, as well as atmospheric fallout are all contributing sources.

Evidence indicates that: (1) high phosphorus concentrations are associated with accelerated eutrophication of waters, when other growth-promoting factors are present; (2) aquatic plant problems develop in reservoirs and other standing waters at phosphorus values lower than those critical in flowing streams; (3) reservoirs and lakes collect phosphates from influent streams and store a portion of them within consolidated sediments, thus serving as a phosphate sink; and, (4) phosphorus concentrations critical to noxious plant growth vary, and nuisance growths may result from a particular concentration of phosphate in one geographical area but not in another. The amount or percentage of inflowing nutrients that may be retained by a lake or reservoir is variable and will depend upon: (1) the nutrient loading to the lake or reservoir; (2) the volume of the euphotic zone; (3) the extent of biological activities; (4) the detention time within the lake basin or the time available for biological activities; and, (5) the level of discharge from the lake or of the penstock from the reservoir.

Once nutrients are combined within the aquatic ecosystem, their removal is tedious and expensive. Phosphates are used by algae and higher aquatic plants and an excess may be stored within the plant cell. With decomposition of the plant cell, some phosphorus may be released immediately through bacterial action for recycling within the biotic community, while the remainder may be deposited with sediments. Much of the material that becomes combined with the consolidated sediments within the lake bottom is bound permanently and will not be recycled into the system.

RATIONALE

Elemental Phosphorus

Isom (1960) reported an LC_{50} of 0.105 mg/l at 48 hours and 0.025 mg/l at 160 hours for bluegill sunfish, *Lepomis macrochirus*, exposed to yellow phosphorus in distilled water at 26° C and pH 7. The 125- and 195-hour LC_{50} s of yellow phosphorus to Atlantic cod, *Gadus morhua*, and Atlantic salmon, *Salmo salar*, smolts in continuous exposure experiments were 1.89 and 0.79 ug/l, respectively (Fletcher and Hoyle, 1972). No evidence of an incipient lethal level was observed since the lowest concentration of elemental phosphorus (P_4) tested was 0.79 ug/l. Salmon that were exposed to elemental phosphorus concentrations of 40 ug/l or less developed a distinct external red color and showed signs of extensive hemolysis. The predominant features of P_4 poisoning in salmon were external redness, hemolysis, and reduced hematocrits.

Following the opening of an elemental phosphorus production plant in Long Harbour, Placentia Bay, Newfoundliand, divers observed dead fish upon the bottom throughout the harbour (Peer, 1972). Mortalities were confined to a water depth of less than 18 meters. There was visual evidence of selective mortality among benthos. Live mussels were found within 300 meters of the effluent pipe, while all scallops within this area were dead.

Fish will concentrate elemental phosphorus from water containing as little as 1 ug/l (Idler, 1969). In one set of experiments, a cod swimming in water containing 1 ug/l elemental phosphorus for 18 hours concentrated phosphorus to 50 ug/kg in muscle, 150 ug/kg in fatty tissue, and 25,000 ug/kg in the liver (Idler, 1969; Jangaard, 1970). The experimental findings showed that phosphorus is quite stable in the fish tissues.

The criterion of 0.10 ug/l elemental phosphorus for marine or estuarine waters is 1/10 of demonstrated lethal levels to important marine organisms and of levels that have been found to result in significant bioaccumulation.

Phosphate Phosphorus

Although a total phosphorus criterion to control nuisance aquatic growths is not presented, it is believed that the following rationale to support such a criterion, which currently is evolving, should be considered.

Total phosphate phosphorus concentrations in excess of 100 ug/l P may interfere with coagulation in water treatment plants. When such concentrations exceed 25 ug/l at the time of the spring turnover on a volume-weighted basis in lakes or reservoirs, they may occasionally stimulate excessive or nuisance growths of algae and other aquatic plants. Algal growths impart undesirable tastes and odors to water, interfere with water treatment, become aesthetically unpleasant, and alter the chemistry of the water supply. They contribute to the phenomenon of cultural eutrophication.

To prevent the development of biological nuisances and to control accelerated or cultural eutrophication, total phosphates as phosphorus (P) should not exceed 50 ug/l in any stream at the point where it enters any lake or reservoir, or 25 ug/l within the lake or reservoir. A desired goal for the prevention of plant nuisances in streams or other flowing waters not discharging directly to lakes or impoundments is 100 ug/l total P (Mackenthun, 1973). Most relatively uncontaminated lake districts are known to have surface waters that contain from 10 to 30 ug/l total phosphorus as P (Hutchinson, 1957).

The majority of the Nation's eutrophication problems are associated with lakes or reservoirs, and currently more data support the establishment of a limiting phosphorus level in those waters than in streams or rivers that do not directly impact such water. Natural conditions also dictate the consideration of either a more or less stringent phosphorus level. Eutrophication problems may occur in waters where the phosphorus concentration is less than that indicated above and, obviously, there would be a need in such waters to have nutrient limits that are more stringent. Likewise, there are those waters within the Nation where phosphorus is not now a limiting nutrient and where the need for phosphorus limits is substantially diminished. Such conditions are described in the last paragraph of this rationale.

Two basic needs must be met in establishing a phosphorus criterion for flowing waters: one is to control the development of plant nuisances within the flowing water and, in turn, to control and prevent animal

pests that may become associated with such plants; the other is to protect the downstream receiving waterway, regardless of its proximity in linear distance. It is evident that a portion of that phosphorus that enters a stream or other flowing waterway eventually will reach a receiving lake or estuary either as a component of the fluid mass, as bed load sediments that are carried downstream, or as floating organic materials that may drift just above the stream's bed or float on its surface. Superimposed on the loading from the inflowing waterway, additional phosphorus may enter the lake or estuary as fallout from the air shed or as a direct introduction from shoreline areas.

Another method to control the inflow of nutrients, particularly phosphates, into a lake is that of prescribing an annual loading to the receiving water. Vollenweider (1973) suggests total phosphorus (P) loadings in grams per square meter of surface area per year that will be a critical level for eutrophic conditions within the receiving waterway for a particular water volume where the mean depth of the lake in meters is divided by the hydraulic detention time in years. Vollenweider's data (Table 13) suggest a range of loading values that should result in oligotrophic lake water quality.

Table 13.

Mean depth/hydraulic detention time	Oligotrophic or permissible loading	Eutrophic or critical loading
(meters/year)	(grams/meter ² /year)	(grams/meter ² /year)
0.5	0.07	0.14
1.0	0.10	0.20
2.5	0.16	0.32
5.0	0.22	0.45
7.5	0.27	0.55
10.0	0.32	0.63
25.0	0.50	1.00
50.0	0.71	1.41
75.0	0.87	1.73
100.0	1.00	2.00

There may be waterways wherein higher concentrations or loadings of total phosphorus do not produce eutrophy, as well as those waterways wherein lower concentrations or loadings of total phosphorus may be associated with populations of nuisance organisms. Waters now containing less than the specified amounts of phosphorus should not be degraded by the introduction of additional phosphates.

It should be recognized that a number of specific exceptions can occur to reduce the threat of phosphorus as a contributor to lake eutrophy. Often, naturally occurring phenomena limit the development of plant nuisances; often there are technological or cost-effective limitations to the control of introduced pollutants. Exceptions to the threat of phosphorus in eutrophication occur in waters (1) highly laden with natural silts or colors which reduce the penetration of sunlight needed for plant photosynthesis; (2) whose morphometric features of

steep banks, great depth, and substantial flows contribute to a history of no plant problems; (3) that are managed primarily for waterfowl or other wildlife; (4) where an identified nutrient other than phosphorus is limiting to plant growth and the level and nature of such limiting nutrient would not be expected to increase to an extent that would influence eutrophication; and (5) where phosphorus control cannot be sufficiently effective under present technology to make phosphorus the limiting nutrient. No national criterion is presented for phosphate phosphorus for the control of eutrophication.

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AESTHETIC QUALITIES

CRITERIA

All waters free from substances attributable to wastewater or other discharges that:

- (1) settle to form objectionable deposits;
- (2) float as debris, scum, oil, or other matter to form nuisances;
- (3) produce objectionable color, odor, taste, or turbidity;
- (4) injure or are toxic or produce adverse physiological responses in humans, animals or plants; and
- (5) produce undesirable or nuisance aquatic life.

RATIONALE

Aesthetic qualities of water address the general principles laid down in common law. They embody the beauty and quality of water and their concepts may vary within the minds of individuals encountering the waterway. A rationale for these qualities cannot be developed with quantifying definitions; however, decisions concerning such quality factors can portray the best in the public interest.

Aesthetic qualities provide the general rules to protect water against environmental insults; they provide minimal requirements for freedom from pollution; they are essential to the enjoyment of the Nation's waterways.

NITRATES, NITRITES

CRITERION

10 mg/l nitrate nitrogen (N) for domestic water supply (health).

INTRODUCTION

Two gases (molecular nitrogen and nitrous oxide) and five forms of nongaseous, combined nitrogen (amino and amide groups, ammonium, nitrite, and nitrate) are important in the nitrogen cycle. The amino and amide groups are found in soil organic matter and as constituents of plant and animal protein. The ammonium ion is either released from proteinaceous organic matter and urea, or is synthesized in industrial processes involving atmospheric nitrogen fixation. The nitrite ion is formed from the nitrate or the ammonium ions by certain microorganisms found in soil, water, sewage, and the digestive tract. The nitrate ion is formed by the complete oxidation of ammonium ions by soil or water microorganisms; nitrite is an intermediate product of this nitrification process. In oxygenated natural water systems nitrite is rapidly oxidized to nitrate. Growing plants assimilate nitrate or ammonium ions and convert them to protein. A process known as denitrification takes place when nitrate-containing soils become anaerobic and the conversion to nitrite, molecular nitrogen or nitrous oxide occurs. Ammonium ions may also be produced in some circumstances.

Among the major point sources of nitrogen entry into water bodies are municipal and industrial wastewaters, septic tanks, and feedlot discharges. Diffuse sources of nitrogen include farm-site fertilizer and animal wastes, lawn fertilizer, leachate from waste disposal in dumps or sanitary landfills, atmospheric fallout, nitric oxide and nitrite discharges from automobile exhausts and other combustion processes, and losses from natural sources such as mineralization of soil organic matter (NAS, 1972). Water reuse systems in some fish hatcheries employ a nitrification process for ammonia reduction; this may result in exposure of the hatchery fish to elevated levels of nitrite (Russo, et al. 1974).

RATIONALE

In quantities normally found in food or feed, nitrates become toxic only under conditions in which they are, or may be, reduced to nitrites. Otherwise, at "reasonable" concentrations, nitrates are rapidly excreted in the urine. High intake of nitrates constitutes a hazard primarily to warmblooded animals under conditions that are favorable to their

reduction to nitrite. Under certain circumstances, nitrate can be reduced to nitrite in the gastrointestinal tract which then reaches the bloodstream and reacts directly with hemoglobin to produce methemoglobin, with consequent impairment of oxygen transport.

The reaction of nitrite with hemoglobin can be hazardous in infants under 3 months of age. Serious and occasionally fatal poisonings in infants have occurred following ingestion of untreated well waters shown to contain nitrate at concentrations greater than 10 mg/l nitrate nitrogen (N) (NAS, 1974). High nitrate concentrations frequently are found in shallow farm and rural community wells, often as the result of inadequate protection from barnyard drainage or from septic tanks (USPHS, 1961; Stewart, et al. 1967). Increased concentrations of nitrates also have been found in streams from farm tile drainage in areas of intense fertilization and farm crop production (Harmeson, et al. 1971). Approximately 2,000 cases of infant methemoglobinemia have been reported in Europe and North America since 1945; 7 to 8 percent of the affected infants died (Walton, 1951; Sattelmacher, 1962). Many infants have drunk water in which the nitrate nitrogen content was greater than 10 mg/l without developing methemoglobinemia. Many public water supplies in the United States contain levels that routinely are in excess of this amount, but only one U.S. case of infant methemoglobinemia associated with a public water supply has ever been reported (Vigil, et al. 1965). The differences in susceptibility to methemoglobinemia are not yet understood but appear to be related to a combination of factors including nitrate concentration, enteric bacteria, and the lower acidity characteristic of the digestive systems of baby mammals. Methemoglobinemia symptoms and other toxic effects were observed when high nitrate well waters containing pathogenic bacteria were fed to laboratory mammals (Wolff and Wasserman, 1972). Conventional water treatment has no significant effect on nitrate removal from water (NAS, 1974).

Because of the potential risk of methemoglobinemia to bottle-fed infants, and in view of the absence of substantiated physiological effects at nitrate concentrations below 10 mg/l nitrate nitrogen, this level is the criterion for domestic water supplies. Waters with nitrite nitrogen concentrations over 1 mg/l should not be used for infant feeding. Waters with a significant nitrite concentration usually would be heavily polluted and probably bacteriologically unacceptable.

Westin (1974) determined that the respective 96-hour and 7-day LC_{50} values for chinook salmon, *Oncorhynchus tshawytscha*, were 1,310 and 1,080 mg/l nitrate nitrogen in fresh water and 990 and 900 mg/l nitrate nitrogen in 15 o/oo saline water. For fingerling rainbow trout, *Salmo gairdneri*, the respective 96-hour and 7-day LC_{50} values were 1,360 and 1,060 mg/l nitrate nitrogen in fresh water, and 1,050 and 900 mg/l nitrate nitrogen in 15 o/oo saline water. Trama (1954) reported that the 96-hour LC_{50} for bluegills, *Lepomis macrochirus*, at 20° C was 2,000 mg/l nitrate nitrogen (sodium nitrate) and 420 mg/l nitrate nitrogen (potassium nitrate). Knepp and Arkin (1973) observed that largemouth bass, *Micropterus salmoides*, and channel catfish, *Ictalurus punctatus*, could be maintained at concentrations up to 400 mg/l nitrate (90 mg/l

nitrate nitrogen) without significant effect upon their growth and feeding activities.

The 96-hour and 7-day LC₅₀ values for chinook salmon, *Oncorhynchus tshawytscha*, were found to be 0.9 and 0.7 mg/l nitrite nitrogen in fresh water (Westin, 1974). Smith and Williams (1974) tested the effects of nitrite nitrogen and observed that yearling rainbow trout, *Salmo gairdneri*, suffered a 55 percent mortality after 24 hours at 0.55 mg/l, fingerling rainbow trout suffered a 50 percent mortality after 24 hours of exposure at 1.6 mg/l, and chinook salmon, *Oncorhynchus tshawytscha*, suffered a 40 percent mortality within 24 hours at 0.5 mg/l. There were no mortalities among rainbow trout exposed to 0.15 mg/l nitrite nitrogen for 48 hours. These data indicate that salmonids are more sensitive to nitrite toxicity than are other fish species, e.g., minnows, *Phoxinus laevis*, that suffered a 50 percent mortality within 1.5 hours of exposure to 2,030 mg/l nitrite nitrogen, but required 14 days of exposure for mortality to occur at 10 mg/l (Klingler, 1957), and carp, *Cyprinus carpio*, when raised in a water reuse system, tolerated up to 1.8 mg/l nitrite nitrogen (Saeki, 1965).

Gillette, et al. (1952) observed that the critical range for creek chub, *Semotilus atromaculatus*, was 80 to 400 mg/l nitrite nitrogen. Wallen, et al. (1957) reported a 24-hour LC₅₀ of 1.6 mg/l nitrite nitrogen, and 48- and 96-hour LC₅₀ values of 1.5 mg/l nitrite nitrogen for mosquitofish, *Gambusia affinis*. McCoy (1972) tested the nitrite susceptibility of 13 fish species and found that logperch, *Percina caprodes*, were the most sensitive species tested (mortality at 5 mg/l nitrite nitrogen in less than 3 hours of exposure), whereas carp, *Cyprinus carpio*, and black bullheads, *Ictalurus melas*, survived 40 mg/l nitrite nitrogen for a 48-hour exposure period; the common white sucker, *Catostomus commersoni*, and the quillback, *Carpionodes cyprinus*, survived 100 mg/l for 48 and 36 hours, respectively.

Russo, et al. (1974) performed flow-through nitrite bioassays in hard water (hardness = 199 mg/l CaCO₃, alkalinity = 176 mg/l CaCO₃, pH = 7.9) on rainbow trout, *Salmo gairdneri*, of four different sizes, and obtained 96-hour LC₅₀ values ranging from 0.19 to 0.39 mg/l nitrite nitrogen. Duplicate bioassays on 12-gram rainbow trout were continued long enough for their toxicity curves to level off, and asymptotic LC₅₀ concentrations of 0.14 and 0.15 mg/l were reached in 8 days; on day 19, additional mortalities occurred. For 2-gram rainbow trout, the minimum tested level of nitrite nitrogen at which no mortalities were observed after 10 days was 0.14 mg/l; for the 235-gram trout, the minimum level with no mortality after 10 days was 0.06 mg/l.

It is concluded that: (1) levels of nitrate nitrogen at or below 90 mg/l would have no adverse effects on warm water fish (Knepp and Arkin, 1973); (2) nitrite nitrogen at or below 5 mg/l should be protective of most warm water fish (McCoy, 1972); and (3) nitrite nitrogen at or below 0.06 mg/l should be protective of salmonid fishes (Russo, et al. 1974; Russo and Thurston, 1975). These levels either are not known to occur or would be unlikely to occur in natural surface waters.

Recognizing that concentrations of nitrate or nitrite that would exhibit toxic effects on warm or cold water fish could rarely occur in nature, restrictive criteria are not recommended.

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AMMONIA

CRITERION

0.02 mg/l (as un-ionized ammonia) for freshwater aquatic life.

Table 2.—Concentrations of total ammonia ($\text{NH}_3 + \text{NH}_4^+$) which contain an un-ionized ammonia concentration of 0.020 mg/l NH_3 (mg/l)^a

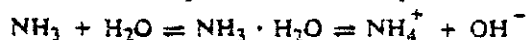
Temperature (°C)	pH Value								
	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
5	180.	51.	16.	5.1	1.6	0.53	0.18	0.071	0.036
10	110.	34.	11.	3.4	1.1	0.36	0.13	0.054	0.031
15	73.	23.	7.3	2.3	0.75	0.25	0.093	0.043	0.027
20	50.	16.	5.1	1.6	0.52	0.18	0.070	0.036	0.025
25	35.	11.	3.5	1.1	0.37	0.13	0.055	0.031	0.024
30	25.	7.9	2.5	0.81	0.27	0.099	0.045	0.023	0.022

^a[Abstracted from Thurston et al. (1974)]

INTRODUCTION

Ammonia is a pungent, colorless, gaseous, alkaline compound of nitrogen and hydrogen that is highly soluble in water. It is a biologically active compound present in most waters as a normal biological degradation product of nitrogenous organic matter. It may also reach ground and surface waters through discharge of industrial wastes containing ammonia as a byproduct, or wastes from industrial processes using "ammonia water."

When ammonia dissolves in water, some of the ammonia reacts with the water to form ammonium ions. A chemical equilibrium is established which contains un-ionized ammonia (NH_3), ionized ammonia (NH_4^+), and hydroxide ions (OH^-). The equilibrium for these chemical species can be expressed in simplified form by the following equation:



In the above equation, NH_3 represents ammonia gas combining with water. The term $\text{NH}_3 \cdot \text{H}_2\text{O}$ represents the un-ionized ammonia molecule which is loosely attached to water molecules. Dissolved un-ionized ammonia will be represented for convenience as NH_3 . The ionized form of ammonia will be represented as NH_4^+ . The term total ammonia will refer to the sum of these ($\text{NH}_3 + \text{NH}_4^+$).

The toxicity of aqueous solutions of ammonia is attributed to the NH_3 species. Because of the equilibrium relationship among NH_3 , NH_4^+ , and OH^- , the toxicity of ammonia is very much dependent upon pH as well

as the concentration of total ammonia. Other factors also affect the concentration of NH_3 in water solutions, the most important of which are temperature and ionic strength. The concentration of NH_3 increases with increasing temperature, and decreases with increasing ionic strength. In aqueous ammonia solutions of dilute saline concentrations, the NH_3 concentration decreases with increasing salinity.

Percent NH_3 for aqueous ammonia solutions of zero salinity at different values of pH and temperature is given in Table 3. This percentage can be used to determine the amount of total ammonia which is in the most toxic (NH_3) form.

Table 3.—Percent un-ionized ammonia in aqueous ammonia solutions*

Temperature (°C)	pH Value								
	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
5	0.013	0.040	0.12	0.39	1.2	3.8	11.	28.	56.
10	0.019	0.059	0.19	0.59	1.8	5.6	16.	37.	65.
15	0.027	0.087	0.27	0.86	2.7	8.0	21.	46.	73.
20	0.040	0.13	0.40	1.2	3.8	11.	28.	56.	80.
25	0.057	0.18	0.57	1.8	5.4	15.	36.	64.	85.
30	0.080	0.25	0.80	2.5	7.5	20.	45.	72.	89.

*[Thurston, et al. (1974)]

RATIONALE

It has been known since early in this century that ammonia is toxic to fishes and that the toxicity varies with the pH of the water. Chipman (1934) demonstrated that undissociated ammonia (NH_3) was the chemical species toxic to goldfish, amphipods, and cladocerans. He concluded from his studies that the toxicity of ammonium salts was pH-dependent and was directly related to the concentration of undissociated ammonia. Chipman's work was confirmed by Wuhrmann, et al. (1947) who concluded that the NH_3 fraction was toxic to fish and that the NH_4^+ fraction had little or no toxicity. Further studies by Wuhrmann and Woker (1948) and Downing and Merckens (1955) agreed with these earlier findings. Tabata (1962), however, has attributed some degree of toxicity to fishes and invertebrates by the NH_4^+ species (less than 1/50th that of NH_3).

In most natural waters, the pH range is such that the NH_4^+ fraction of ammonia predominates; however, in highly alkaline waters, the NH_3 fraction can reach toxic levels. Many laboratory experiments of relatively short duration have demonstrated that the lethal concentrations for a variety of fish species are in the range of 0.2 to 2.0 mg/l NH_3 , with trout being the most sensitive and carp the most resistant. Although coarse fish such as carp survive longer in toxic solutions than do salmonids, the difference in sensitivity among fish species to prolonged exposure is probably small (European Inland Fisheries Advisory Commission, 1970). The lowest lethal concentration reported for salmonids is 0.2 mg/l NH_3 for rainbow trout fry, *Salmo gairdneri*

(Liebmann, 1960). The toxic concentration for Atlantic salmon smolts, *Salmo salar* (Herbert and Shurben, 1965), and for rainbow trout (Ball, 1967) was found to be only slightly higher. Although a concentration of NH_3 below 0.2 mg/l may not kill a significant proportion of a fish population, such concentration may still exert an adverse physiological or histopathological effect (Flis, 1968; Lloyd and Orr, 1969; Smith and Piper, 1975). Fromm (1970) found that at concentrations of 3 mg/l ammonia as N, the trout became hyperexcitable; at 5 mg/l, ammonia excretion by rainbow trout was inhibited; and at 8 mg/l, 50 percent died within 24 hours. Burrows (1964) found progressive gill hyperplasia in fingerling chinook salmon, *Oncorhynchus tshawytscha*, during a 6-week exposure to a total ammonia concentration (expressed as NH_4) of 0.3 mg/l (0.002 mg/l NH_3), which was the lowest concentration applied. Reichenbach-Klinke (1967) also noted gill hyperplasia, as well as pathological effects on the liver and blood of various species at a concentration of 0.27 mg/l NH_3 . Flis (1968) noted that exposure of carp, *Cyprinus carpio*, to sublethal NH_3 concentrations resulted in extensive necrotic changes and tissue disintegration in various organs.

Herbert and Shurben (1965) reported that the resistance of yearling rainbow trout to ammonia increased with salinity (i.e., dilution with about 30 percent seawater) but above that level resistance appeared to decrease. Katz and Pierro (1967) subjected fingerling coho salmon, *Oncorhynchus kisutch*, to an ammonia waste at salinity levels of 20, 25, and 29 parts per thousand (i.e., dilution with about 57-83 percent seawater) and also found that toxicity increased with increased salinity. In saline waters the $\text{NH}_4^+/\text{NH}_3$ ratio must be adjusted by consideration of the activity of the charged species and total ionic strength of the solution. In dilute saline waters this ratio will change to favor NH_4^+ , and thereby reduce the concentration of the toxic NH_3 species. At higher salinity levels the reported toxic effects of ammonia to fish must therefore be attributed to some mechanism other than changes in the $\text{NH}_4^+/\text{NH}_3$ ratio. Data on the effect of ammonia on marine species are limited and the information on anadromous species generally has been reported in conjunction with studies on freshwater species.

Although the NH_3 fraction of total ammonia increases with temperature, the toxic effect of NH_3 versus temperature is not clear. Burrows (1964) has reported that the recovery rate from hyperplasia in gill tissues of chinook salmon, *Oncorhynchus tshawytscha*, exposed first to ammonia at sublethal levels and then to fresh water was less at 6°C than at 14°C. In this experiment, comparison was made between two different age classes of salmon.

Levels of un-ionized ammonia in the range of 0.20 to 2 mg/l have been shown to be toxic to some species of freshwater aquatic life. To provide safety for those life forms not examined, 1/10th of the lower value of this toxic effect range results in a criterion of 0.020 mg/l of un-ionized ammonia. This criterion is slightly lower than that recommended for European inland fisheries (EIFAC, 1970) for temperatures above 5°C and pH values below 8.5. Measurement of values of total ammonia for calculation of values in the range of 0.020 mg/l NH_3 is well within current analytical capability.

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A REVIEW OF THE EPA RED BOOK:
QUALITY CRITERIA FOR WATER

Edited by

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PHOSPHORUS

EPA Criterion

0.10 µg/l yellow (elemental) phosphorus for marine or estuarine waters.

Reviewers: G.F. Lee (Coordinator), R.A. Jones, B.A. Manny, J.G. Pearson, D.L. Swanson, R.G. Wetzel, and J.C. Wright

The Red Book discussion and criterion for elemental phosphorus should have been in a section separate from that of phosphate phosphorus. Elemental phosphorus is a highly toxic element which occurs in the environment under very rare conditions. Phosphate phosphorus is a naturally occurring material which is of water quality significance because it may lead to excessive fertilization problems. The nature of the sources and effects on environmental quality for these two forms of phosphorus are significantly different and, therefore, should be separated into two sections in order to avoid confusion. This review discusses each of the two forms separately.

A. ELEMENTAL PHOSPHORUS

I. Criterion

In general, the review panel had limited familiarity with the problems of elemental phosphorus. However, one member (Pearson) was in the process of reviewing a comprehensive report on the environmental impact of elemental phosphorus (Bentley et al. In press). Based on the information provided by him, it is the conclusion of the panel that consideration should be given to altering the criterion for elemental phosphorus to 0.04 µg/liter P for both fresh and marine waters. This represents a change from the 0.1 µg/liter P criterion recommended by the U.S. EPA for marine waters. The review panel feels there is sufficient evidence at this time to justify a re-evaluation of the elemental phosphorus criterion and recommends that as part of the next revision of the EPA water quality criteria, a critical review be conducted of the information that is available at that time. By then, the unpublished information which was made available to this panel, which suggests that a 0.04 µg/liter P criterion should be used, will have been published and the technical community will have had the opportunity to review this information critically and judge its appropriateness.

II. Introduction

It is recommended that Red Book paragraph 2, page 187, be deleted from any future writeups of the criteria for phosphorus. It adds little to the understanding of the behavior of phosphorus in natural waters and its significance in causing water quality problems. The presence of phosphate rock, per se, does not necessarily lead to a water quality problem. This paragraph is extraneous to the overall writeup and should be deleted.

III. Rationale

In both the "Introduction" and the "Rationale", mention is made of the bioaccumulation of elemental phosphorus within fish. No discussion is presented on the significance of this bioaccumulation, however. If the significance is unknown, then the text should say so. If any significance is attributed to bioaccumulation of elemental phosphorus, then this should be presented in the discussion of elemental phosphorus in natural waters. There are some questions about whether or not elemental phosphorus can bioaccumulate in a potentially toxic form.

Page 187, P.3. The reference to "yellow phosphorus" should be changed to "elemental phosphorus". A statement should be included to explain what is meant by "P₄", i.e., why elemental phosphorus is called P₄. It is recommended that someone thoroughly familiar with the nomenclature of elemental phosphorus review any revisions of the elemental phosphorus section before publication of a revised EPA criteria.

Page 188, P.2, 2.2-3. What is the justification for the 1/10th factor? Justification should be provided for this factor in relating the "demonstrated lethal levels" and levels that have been found to result in "significant bioaccumulation" to the criterion.

Page 188, P.2, 2.4. What is meant by "significant bioaccumulation"? An explanation should be provided as to the meaning of the word "significant".

B. PHOSPHATE PHOSPHORUS

I. Criterion

No criterion is provided for phosphate phosphorus. Instead, a discussion is presented on various methods that have been used to estimate the impact of phosphate phosphorus on excessive fertilization of natural waters. It is the recommendation of this review panel that the phosphorus loading approach formulated by Vollenweider (1975, 1976) and modified and expanded by Rast and Lee (1978) be utilized to establish the relationship between phosphorus load to a lake, impoundment, or estuary, and the excessive fertilization problems that may occur in the water body arising from the growth of planktonic algae. This recommendation is further discussed in detail in a subsequent section of this review.

II. Introduction

From an overall point of view, the discussion of the significance of

phosphate phosphorus is highly simplistic. Specific points of concern in the "Introduction" are listed below.

Page 186, P.1, 2.4-5. This sentence should be rephrased and clarified. The term "critical concentrations" has different meanings to different individuals: Available phosphorus, at all concentrations, stimulates algal growth if it is the growth-limiting element. Also in this sentence, the word "phosphates" should be changed to "phosphate". As written, this sentence implies that the cation associated with the phosphate is of some importance in the impact of phosphate on water quality. There is no evidence to support this statement. This problem also occurs at other locations such as page 186, P.3, 2.1. Reference to "phosphates" throughout the phosphate phosphorus section should be changed to "phosphate".

Page 186, P.1, 2.6. "Aquatic plants" should read "algae" since rooted aquatic plants can obtain some of their phosphorus from sediments.

Page 186, P.1, 2.7. This sentence should read, "increased supplies of available phosphorus". It is now well known that only certain forms of phosphorus are available to stimulate algal growth.

Page 186, P.1, 2.8-9. The word "aging" should be deleted. It is a general misconception among those who are not familiar with the eutrophication process of natural waters, that eutrophication is in some way related to the shortening of the life of the lake or impoundment. Eutrophication and the water quality problems associated with excessive fertilization are controlled primarily by the overall phosphorus load (for some lakes: nitrogen or other elements), the lake's morphology as measured by mean depth, and its hydrology as measured by the hydraulic residence time. As discussed by Lee (1973) the water quality of a lake receiving large amounts of culturally derived phosphorus can deteriorate significantly. This, however, does not necessarily result in a significant shortening of the overall life of the lake as measured by the filling of the lake, except during the final stages of a lake's life when it becomes essentially completely filled with aquatic macrophytes. The filling of lakes is determined primarily by the erosion of clastic materials from the watershed and not by the production of phytoplankton in the lake. Work on the chemical characteristics of lake sediments supports this approach. Therefore, where eutrophication is primarily manifested in the production of planktonic algae, highly eutrophic lakes do not, in general, fill at a significantly different rate than oligotrophic lakes. Also, change "waters" to "water bodies".

Page 186, P.1, 2.11. Mention is made that phosphorus stimulates the growth of freshwater plants. "Plants" should be changed to "algae" since the relationship between phosphorus load and macrophyte growth is not clear. However, since macrophytes obtain all or part of their phosphorus from the sediments and since the phosphorus load to a water body contributes phosphorus to the sediments, increased macrophyte growth would likely occur in shallow water bodies when inputs of phosphorus are increased.

Page 186, P.3, 2.2 and 4. A metric equivalent should be given for

the amounts of phosphorus derived from various sources.

Page 186, P.3, 2.4. This sentence should be rewritten to reflect the fact that the total per capita phosphorus in domestic wastewaters today is about three pounds (1.4 kilograms) per year. Approximately one pound (0.45 kilograms) per person per year is derived from human excreta. Synthetic detergents contribute another pound or 0.45 kilograms per person per year. The amount of phosphorus used in synthetic detergents has decreased significantly over the past half a dozen years with the result that the phosphorus content of domestic wastewaters which is attributable to detergents is currently about 35 percent.

Page 186, P.3, 2.8. "Effluent from tile lines" is not meaningful to many of the readers. This should be more clearly delineated as to what is meant. The concentrations of ducks is an awkward way to describe the impact of wild and domestic ducks.

Page 187, P.1, 2.13. In addition to listing the volume of the euphotic zone as an important factor for controlling the amount of nutrients retained in a lake, the volume of the lake and its depth should also be listed.

Page 187, P.1, 2.14. Item (4) should read, "the detention time of water within the lake basin . . .".

Page 187, P.1 and 2. These two paragraphs should be prefaced by a phrase such as "In a simplistic way", or "Simplistically" followed by a listing of the various items. Many of the items and ideas listed, when corrected as noted above, are proper. However, it should be indicated to the reader who is not knowledgeable in the area, that this discussion is a very simplistic overview.

III. Rationale

Page 188, P.3. It is proposed that this paragraph be deleted and that a specific recommendation involving the use of the attached revised Table 13 be used by the EPA as the criterion for those water bodies for which phosphorus is or can be made to be the primary factor limiting planktonic algal growth.

Page 188, P.4, 2.1. The statement that total phosphorus concentrations in excess of 100 ug/liter P interfere with coagulation is not correct. There are certain forms of phosphorus which interfere with water coagulation. These should not be equated to total phosphate.

Page 188, P.4 and 5. The statement in paragraphs 4 and 5 concerning so-called "critical concentrations" of phosphorus for lakes, impoundments, and rivers should be deleted. There are many exceptions to these relationships. This is why the Vollenweider-type relationship involving phosphorus load has developed. One cannot, with any degree of reliability, predict the water quality problems due to algae based on phosphorus concentrations at one time during the year. An attempt to establish, as some states have done, single value critical concentrations, is not in

Table 43-1. Replacement for Red Book Table 13

Mean Depth/Hydraulic Residence Time (m/yr)	Oligotrophic or Permissible Loading (g/m ² /yr)	Eutrophic or Critical Loading (g/m ² /yr)
0.25	0.102	0.205
0.5	0.105	0.21
1.0	0.11	0.22
2.5	0.125	0.25
5.0	0.15	0.30
7.5	0.175	0.35
10.0	0.20	0.40
25.0	0.35	0.70
50.0	0.60	1.2
75.0	0.85	1.7
100.0	1.1	2.2

Based on relationships developed by Vollenweider (1976).

accord with the information available today on the role of phosphorus in causing fertilization problems in water bodies. Listing of numbers such as 25 µg/liter or 50 µg/liter as critical concentrations for phosphorus will tend to promote out-dated approaches for establishing water quality standards. All reference to specific numerical phosphorus concentrations should be deleted from this discussion.

Page 189, P.2. This discussion should be expanded to include reference to the work of Rast and Lee (1978). On behalf of the U.S. EPA as part of the Organization for Economic Cooperation and Development (OECD) Eutrophication Program, they conducted a detailed review of the phosphorus load-lake and impoundment water quality response relationships for a variety of water bodies across the U.S. Rast and Lee have found that the modified Vollenweider approach, involving the relationship between the areal phosphorus load to a water body and the mean depth and hydraulic residence time of the water body, is a valid approach to use to predict water quality characteristics of those water bodies in which algal growth is or can be made to be limited by phosphorus. The current Table 13 is based on an early version of Vollenweider's work. It has subsequently been shown by Rast and Lee that the revised approach developed by Vollenweider (1976) (see revised Table 13) gives a better representation of the nutrient load-response relationships for U.S. water bodies studied as part of the U.S. OECD Eutrophication Program, than does the original version.

A discussion should also be presented on the proper interpretation of "permissible" and "excessive" phosphorus loadings. It is important to point out that the "permissible" and "excessive" loading curves do not represent sharp boundary lines. The fact that a lake has a load that is slightly above the critical loading value does not mean that it has significantly different water quality than a lake that is just below the critical loading level for the same morphological and hydrological relationships. As discussed by Rast and Lee (1978), for a series of lakes, in which algal growth is phosphorus limited and which have the same mean depth/hydraulic residence time ratios but different areal P loadings, there is a gradation of water quality among them which is proportional to the areal P load. The best water quality would be found in lakes which have the lowest areal P load. Conversely, the worst water quality would be found in those water bodies with the highest areal P load.

It should also be pointed out in the text that the permissible and critical loading curves are, in general, based on impairment of the recreational use of water bodies due to planktonic algal growth. These values are not necessarily directly applicable to other impacts of planktonic algal growth such as taste and odors in water supplies and the growth of attached algae or aquatic macrophytes. Rast and Lee (1978) have found that the Vollenweider permissible loading curve approximately corresponds to an average summer chlorophyll *a* concentration of 2 µg/liter; an average summer Secchi depth of 4.5 m; and a hypolimnetic oxygen depletion rate of 0.3 g O₂/m²/day. The corresponding approximate values for the "excessive" loading line are: 6 µg/liter average summer chlorophyll *a*; 2.7 m average summer Secchi depth; and 0.6 g O₂/m²/day hypolimnetic

oxygen depletion rate. The results of this work can be used by a water pollution regulatory agency to establish its own permissible and excessive loading values for any given water body, based on the water quality that is desired in the water body.

Page 190, P.1, 2.8-9. This sentence should be deleted. Instead a recommendation should be made for adoption of the revised Table 13 as the criterion for those water bodies which are or can be made to be phosphorus limited and in which the problems of deteriorated water quality are manifested as excessive growths of planktonic algae. It should be pointed out that additional work is needed to develop criteria for water bodies in which algal growth is limited by nitrogen or some other element, or by light, and for water bodies in which the primary aquatic plant growths are aquatic macrophytes and/or attached algae.

IV. References Cited

The reference to Hutchinson (1957) should be deleted as currently used. It does not help in establishing the criterion for phosphate phosphorus. The reference to Mackenthun (1973) also should be deleted or be used only as a general reference to eutrophication problems. The reference to Vollenweider (1973) is incomplete. Other references, cited above, should be included.

Literature Cited

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PHOSPHORUS

Water Quality Standards
Criteria Summaries
A Compilation of State/Federal Criteria

September 1980

U. S. Environmental Protection Agency
Office of Water Regulations and Standards
Washington, D. C. 20460

INTRODUCTION

This digest is compiled to provide general information to the public as well as to Federal, State, and local officials. It contains excerpts from the individual Federal-State water quality standards establishing pollutant specific criteria for interstate surface waters. The water quality standards program is implemented by the U. S. Environmental Protection Agency where responsibility for providing water quality recommendations, approving State-adopted standards for interstate waters, evaluating adherence to the standards, and overseeing enforcement of standards compliance, has been mandated by Congress.

Standards, a nationwide strategy for surface water quality management, contain three major elements: the use (recreation, drinking water, fish and wildlife propagation, industrial, or agricultural) to be made of the navigable water; criteria to protect these uses; and an antidegradation statement to protect existing high quality waters, from degradation by the addition of pollutants.

Water quality criteria (numerical or narrative specifications) for physical, chemical, temperature, and biological constituents are stated in the July 1976 U. S. Environmental Protection Agency publication Quality Criteria for Water (QCW), available from the Government Printing Office, Washington, D. C. The 1976 QCW, commonly referred to as the "Red Book," is the most current compilation of scientific information used by the Agency as a basis for assessing water quality. This publication is subject to periodic updating and revisions in light of new scientific and technical information.

Criteria for phosphorus in State water quality standards are the subject of this digest. Phosphorus criteria for water are established to provide a threshold level which when exceeded would most likely result in aquatic life toxicity, due to elemental phosphorus, and excessive aquatic plant growth, caused by phosphate phosphorus which is an essential plant nutrient. Phosphorus and phosphates usually enter a waterbody from land runoff, human and animal excreta, decaying vegetation, and industrial processes and detergents. Once combined with other nutrients in a waterbody, their removal becomes tedious and expensive. The 1976 Quality Criteria for Water recommends a phosphorus criterion of:

0.10 ug/l yellow (elemental) phosphorus for marine and estuarine waters.

There is no freshwater criterion.

Since water quality standards experience revisions and upgrading from time to time, following procedures set forth in the Clean Water Act, individual entries in this digest may be superseded. As these revisions are accomplished and allowing for the States to revise their standards accordingly, this digest will be updated and

reissued. Because this publication is not intended for use other than as a general information resource, to obtain the latest information and for special purposes and applications, the reader needs to refer to the current approved water quality standards. These can be obtained from the State water pollution control agencies or the EPA or Regional Offices.

Individual State-adopted criteria follow:

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<u>State</u>	<u>Criteria Value in mg/l</u>	<u>Designated Stream Use</u>
Alabama ¹	Not specified	All
Alaska ²	Not specified	All
Arizona ³	<p>The mean annual total phosphate concentrations of the following waters shall not exceed the values given below nor shall the total phosphate or total nitrate concentrations of more than 10 percent of the samples in any year exceed the 90 percent values given below. Unless otherwise specified, indicated values also apply to tributaries to the named waters.</p> <p>Total phosphates as PO₄ mg/l</p>	
	0.04 Mean annual 0.06 90 pct-value	Colorado River from Utah border to Willow Beach (main stem)
	0.06 Mean annual 0.10 90 pct-value	Colorado River from Willow Beach to Parker Dam (main stem)
	0.08 Mean annual 0.12 90 pct-value	Colorado River from Parker Dam to Imperial Dam (main stem)
	0.10 Mean annual 0.15 90 pct-value	Colorado River from Imperial Dam to Morelos Dam (main stem)
	0.50 Mean annual 0.80 90 pct-value	Gila River from New Mexico border to San Carlos Reservoir (excluding San Carlos Reservoir)
	0.30 Mean annual 0.50 90 pct-value	Gila River from San Carlos Reservoir to Ashurst Hayden Dam (including San Carlos Reservoir)

<u>State</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
Arizona (con't)	0.30 Annual mean 0.50 90 pct-value	San Pedro River
	0.20 Annual mean 0.30 90 pct-value	Verde River (except Granite Creek)
	0.20 Mean annual 0.30 90 pct-value	Salt River above Roosevelt Lake
	0.50 Mean annual 0.80 90 pct-value	Santa Cruz River from international boundary near Nogales to Sahuarita
	0.30 Mean annual 0.50 90 pct-value	Little Colorado River above Lyman Reservoir

The above standards are intended to protect the beneficial uses of the named waters. Because regulation of nitrates and phosphates alone may not be adequate to protect waters from eutrophication, no substance shall be added to any surface water which produces aquatic growth to the extent that such growths create a public nuisance or interference with beneficial uses of the water defined and designated in Reg. 6-2-65. Federally promulgated in June, 1976.

Arkansas ⁴	The naturally occurring nitrogen/phosphorus ratio shall not be significantly altered due to municipal, industrial, agricultural or other waste discharges, nor shall total phosphorus exceed 100 ug/l in streams or 50 ug/l in lakes and reservoirs due to any such discharges.	All
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California ^A	Concentration not to be exceeded: (Total Phosphorus)	
	0.2 mg/l	Marine habitat, warm freshwater habitat (Basin 3)
	0.1 mg/l	Cold freshwater habitat, fish spawning (Basin 3)
	0.05 mg/l	Water contact recreation or non-contact water recreation (Basin 3)

<u>Sts</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
Colorado ⁵	Not specified	All
Connecticut ⁶	None other than of natural origin There shall be no point source discharge into any natural lake or pond or tributary surface waters which will raise the phosphorus concentration, of the receiving surface waters, including phosphorus contained in suspended matter to an amount in excess of 0.03 mg/L.	Drinking water supply Recreation, agricultural, industrial, fish, and wildlife habitat
Delaware ^B	Not specified	All
Florida ⁷	0.0001(Elemental)	Shellfish harvesting recreation, fish and wildlife
Georgia ⁸	Not specified	All
Hawaii ⁹	Total phosphorus, not greater than 0.020 mg/l Not greater than 0.025 mg/l Not greater than 0.030 mg/l Not greater than 0.20 mg/l except not greater than 0.05 mg/l for waters entering lakes or reservoirs.	Class AA Class A Class B Classes 1 and 2
Idaho ¹⁰	Not specified	All
Illinois ¹¹	After December 31, 1983, phosphorus as P shall not exceed 0.05 mg/l in any reservoir or lake with a surface area of 20 acres or more, or in any stream at the point where it enters any such reservoir or lake. For the purposes of this Rule (203C) the term 'reservoir or lake' shall not include low level pools constructed in free flowing streams or any body of water which is an integral part of an operation	All, except Lake Michigan

<u>State</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
Illinois (con't)	which includes the application of sludge on land. Point source discharges which comply with Rule 407 of this Chapter shall be in compliance with this Rule 203(c) for purposes of the application of Rule 402 of this chapter.	
	0.007	All Lake Michigan
Indiana ¹²	0.03 mg/1 monthly average	Inner Harbor
	0.04 mg/1 daily average	Gary Harbor, Burns Harbor, and Lake Michigan
	0.1 mg/1 Maximum value, except in waters flowing westward into Illinois.	Grand Calumet River and Indiana Harbor Ship Canal
	0.04 mg/1 (total phosphorus)	Wolf Lake and Wolf Lake Channel
	Free from substances attributable to municipal, industrial, agricultural or other sources in concentrations or combinations which will cause or contribute to the growth of aquatic plants or algae in such degree as to create a nuisance, be unsightly or deleterious, or be harmful to salmonid fishes or the natural biota.	Natural spawning, rearing or imprinting areas, and migration route for Salmonid Fishes.
Iowa ¹³	Not specified	All
Kansas ¹⁴	Not specified	All
Kentucky ¹⁵	Not specified	All
Louisiana ¹⁶	Not specified	All
	Nutrients: The naturally occurring nitrogen-phosphorous ratio shall be maintained. On completion of detailed studies on the naturally occurring levels of the various macro and micro nutrients the state will establish numerical limits on nutrients where possible.	All

<u>State</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
Maine ¹⁷	Total phosphorus shall not exceed 15 parts per billion	GP-A
	The total phosphorus concentration shall not exceed 50 parts per billion at measured in samples taken at or near the surface of the water.	GP-B
Maryland ¹⁸	The state recognizes that certain waters of the State are eutrophic or are approaching eutrophic conditions. All discharges to waters which are eutrophic or potentially eutrophic, when so identified by the State, shall be treated as necessary to reduce eutrophic effects. The State shall require that wastewaters, containing nutrients which cause or may cause eutrophication be given advanced waste treatment prior to discharge, or be disposed of by spray irrigation on land, or by other practicable procedures which will avoid direct discharge to surface waters.	
Massachusetts ¹⁹	The discharge of nutrients, primarily phosphorus or nitrogen, to waters of the Commonwealth will be limited or prohibited by the Division as necessary to prevent excessive eutrophication of such waters. There shall be no new or increased discharges of nutrients into lakes and ponds, or tributaries thereto. Existing discharges containing nutrients which encourage eutrophication or growth of weeds or algae shall be treated. Activities which may result in non-point discharges of nutrients shall be conducted in accordance with the best management practices reasonably determined by the Division to be necessary to preclude or minimize such discharges of nutrients.	All
Michigan ²⁰	1.0 (monthly average effluent concentration goal)	All
Minnesota ²¹	The standards provide for an effluent limit of 1.0 mg/l where the effluent affects a lake or reservoir.	All

<u>State</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
Mississippi ²²	Not specified	All
Missouri ^D	Not specified	All
Montana ²³	Not specified	All
Nebraska ²⁴	Not specified	All
Nevada ²⁵	Total phosphate shall not exceed 0.15 in any stream at the point where it enters any reservoir or lake, nor 0.075 in any reservoir or lake, nor 0.30 in streams and other flowing waters.	Drinking water supply with treatment by disinfection only suitable for aquatic life habitat, wildlife propagation, agricultural use, recreation, boating and esthetics.
	Total phosphates shall not exceed 0.3	Drinking water supply with treatment by disinfection and filtration only, for agricultural use, aquatic life and wildlife propagation, recreation, industrial supply and esthetics
	Total phosphates shall not exceed 1.0	Domestic water supply following complete treatment, agricultural use, aquatic life, wildlife propagation, recreation, and industrial supply
	See Nevada State Water Quality Criteria Compilation 1979, for specific stretches of stream.	
New Hampshire ²⁶	None, except as naturally occurs	Water supply (after disinfection)
	None in such concentrations (generally less than 0.015 ppm) that would impair any usages assigned to this class unless naturally occurring	All, except water supply (after disinfection)

<u>State</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
New Hampshire (con't)	There shall be no phosphorus in such concentrations that would impair any usages assigned to the specific class involved. Where treatment to remove phosphorus is required under this regulation such treatment shall remove phosphorus to the maximum extent technically feasible.	All
	In all lakes and ponds: There shall be no new point discharge of wastewater containing phosphorus. In addition there shall be no new discharge of wastewater containing phosphorus to tributaries of lakes or ponds that would encourage eutrophication or growth of weeds or algae in such lakes and ponds.	All
	Any point discharge of wastewater existing as of the date of adoption of these rules and regulations and containing phosphates in concentrations which encourage eutrophication or growth of weeds or algae, shall be treated to remove such phosphates to the maximum extent technically feasible.	All
	The preceding shall not apply to any condition due to natural causes.	
New Jersey ²⁷	Phosphorus as total P shall not exceed 50 ug/l in any reservoir, lake, pond or in a tributary at the point where it enters such bodies of water, unless it can be demonstrated that total P is not a limiting factor considering the morphological, physical, chemical and other characteristics of the water body.	Fresh, non-tidal designated for public water supply, biota, recreation, industrial, agricultural, and any other reasonable use.
	Phosphorus at total P shall not exceed 50 mg/l in any reservoir, lake, pond or in a tributary at the point where it enters such bodies of water, unless it can be demonstrated that total P is not a limiting factor considering the morphological, physical, chemical and other characteristics of the water body.	Fresh, non-tidal designated for natural biota, recreation, industrial, agricultural, and any other reasonable use.
	0.7	All uses in central Pine Barrens

<u>State</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
New Mexico ²⁸	Not specified	All
New York ²⁹	Concentration should be limited to the extent necessary to prevent nuisance growths of algae, weeds and slimes that are or may become injurious to any beneficial water use.	All uses of International boundary waters
North Carolina ³⁰	0.0001 (Elemental)	All
North Dakota ³¹	0.1 - 0.2 depending upon type of drinking water treatment process utilized	All
	0.025 (goal)	All lake uses
Ohio ³²	Total phosphorus as P shall be limited to the extent necessary to prevent nuisance growths of algae, weeds, and slimes that result in a violation of the water quality standards set forth in Chapter 3745-1 of the Ohio Administrative Code. In areas where such nuisance growths exist, phosphorus discharges from point sources determined significant by the Ohio Environmental Protection Agency shall not exceed a daily average of one milligram per liter as total P, or such stricter requirements as may be imposed by Ohio EPA in accordance with the International Joint Commission (US-Canada agreement)	Warmwater habitat, exceptional warm water habitat, seasonal warm water habitat, limited warm water habitat (with specific exceptions), cold water habitat, and Lake Erie.
Oklahoma ³³	Not specified	All
	The total phosphorus concentration and the nitrogen/phosphorous concentration ratio shall be limited to present eutrophication problems.	All
	Where historical data on nitrogen and phosphorus does not exist, sample points upstream of the point of discharge shall be used to calculate the natural nitrogen/phosphorus concentration ratio. The application of this standard shall be determined on a case by case basis. Compliance with this standard shall be determined at the end of the mixing zone.	

<u>State</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
Oregon ³⁴	Not specified	All
Pennsylvania ³⁵	P ₁ 0.03 P ₂ 0.10 P ₃ 0.13	See Drainage Lists A through E of Pennsylvania Water Quality Standards for applicable uses and streams
Rhode Island ³⁶	None in such concentration that would impair any usages specifically assigned to said Class. New discharges of wastes containing phosphates will not be permitted into or immediately upstream of lakes or ponds. Phosphates shall be removed from existing discharges to the extent that such removal is or may become technically and reasonably feasible.	All
South Carolina ³⁷	Not specified	All
South Dakota ³⁸	Not specified	All
Tennessee ³⁹	Not specified	All
Texas ⁴⁰	Not specified	All
Utah ⁴¹	0.05 0.025	Recreation, aesthetics, aquatic life All uses in lakes and reservoirs
Vermont ⁴²	There shall be no discharge of wastes to Class A waters that do not meet or exceed the technical and other requirements for such waters nor shall there be any discharge of wastes containing any form of nutrients which would encourage eutrophication or growth of weeds or algae.	All

<u>State</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
Vermont (con't)	There shall be no new or increased discharge of wastes after May 27, 1971 containing any form of nutrients which would encourage eutrophication or growth of weeds and algae in any lake, pond or reservoir. Any discharge of wastes existing prior to May 27, 1971 containing soluble or other nutrients which would encourage eutrophication or growth of weeds and algae in any lake, pond, or reservoir shall receive the highest practical degree of treatment currently available to remove such nutrients.	
Virginia ⁴³	In impounded waters, the total phosphate as phosphorus (P) should not exceed 50 ug/l in any stream where it enters a lake or reservoir nor 25/ug/l within the lake or reservoir.	Class I, II, III, IV, V, and VI waters
Washington ⁴⁴	Not specified	All
West Virginia ⁴⁵	Not specified	All
Wisconsin ⁴⁶	Not specified	All
Wyoming ⁴⁷	Not specified	All
American Samoa ^E	Not specified	All
	The naturally occurring atomic ratio of $\text{NO}_3\text{-N}$ to $\text{PO}_4\text{-P}$ in a body of water will be maintained. Similarly, the ratio of inorganic phosphorus (orthophosphate) to total phosphorus (the sum of inorganic phosphorus, dissolved organic phosphorus, and particulate (phosphorus) will be maintained in the ratio and amount as it occurs in the receiving waters naturally.	Recreation, aquatic life
District of Columbia ⁴⁸	Not specified	All

<u>State</u>	<u>Criteria Value</u>	<u>Designated Stream Use</u>
Guam ^F	Total phosphorus shall not exceed 0.025 mg/l	AA
	Total phosphorus shall not exceed 0.05 mg/l	A, 2b, I, 2b, II, C
	Total phosphorus shall not exceed 0.10 mg/l	2a-I, 2a-II
Puerto Rico ⁴⁹	0.025	All fresh water uses and preservation of coastal water natural phenomena
Trust Territories ^G	0.025	Drinking water supply
	The naturally occurring ratio of the con- centrations of nitrogen to phosphorus will be maintained in all waters.	All
Virgin Islands ^H	0.050	All except preservation of natural phenomena

NITROGEN - AMMONIA/NITRATE/NITRITE

Water Quality Standards
Criteria Summaries
A Compilation of State/Federal Criteria

September 1980

U. S. Environmental Protection Agency
Office of Water Regulations and Standards
Washington, D. C. 20460

INTRODUCTION

This digest is compiled to provide general information to the public as well as to Federal, State, and local officials. It contains excerpts from the individual Federal-State water quality standards establishing pollutant specific criteria for interstate surface waters. The water quality standards program is implemented by the U. S. Environmental Protection Agency where responsibility for providing water quality recommendations, approving State-adopted standards for interstate waters, evaluating adherence to the standards, and overseeing enforcement of standards compliance, has been mandated by Congress.

Standards, a nationwide strategy for surface water quality management, contain three major elements: the use (recreation, drinking water, fish and wildlife propagation, industrial, or agricultural) to be made of the navigable water; criteria to protect these uses; and an antidegradation statement to protect existing high quality waters, from degradation by the addition of pollutants.

Water quality criteria (numerical or narrative specifications) for physical, chemical, temperature, and biological constituents are stated in the July 1976 U. S. Environmental Protection Agency publication Quality Criteria for Water (QCW), available from the Government Printing Office, Washington, D. C. The 1976 QCW, commonly referred to as the "Red Book," is the most current compilation of scientific information used by the Agency as a basis for assessing water quality. This publication is subject to periodic updating and revisions in light of new scientific and technical information.

Criteria for ammonia, nitrate or nitrite nitrogen in State water quality standards are the subject of this digest. Ammonia in most waters is a biological degradation product of nitrogenous organic matter. When dissolved in water, ammonia will react with the water to form ammonium ions. Ammonium can also be released from proteinaceous organic matter and urea, or synthesized from nitrogen fixation. Nitrate is formed from the complete oxidation of ammonium by certain micro organisms in which nitrite is an intermediate product. In well oxygenated waters nitrite is readily oxidized to nitrate. The rationale for establishing water quality criteria for these three common molecular forms of nitrogen are:

- (1) ammonia toxicity to aquatic life is well documented and its toxicity is directly dependent on the pH of the water in which it is dissolved;
- (2) growing plants assimilate nitrate and ammonium ions into plant proteins; and
- (3) both nitrate and nitrite nitrogen are toxic to aquatic life where specific concentrations of either are reached in a waterbody.

To prevent the nuisance and toxic effects of any of the nitrogen forms, the 1976 Quality Criteria for Water recommends the following criteria:

0.02 mg/l (as un-ionized ammonia) for freshwater aquatic life.

Concentrations of total ammonia ($\text{NH}_3 + \text{NH}_4^+$) which contain an un-ionized ammonia concentration of 0.020 mg/l NH_3 (mg/l)

Temperature (°C)	pH Value								
	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
5...	160.	51.	16.	5.1	1.6	0.53	0.18	0.071	0.036
10...	110.	34.	11.	3.4	1.1	0.36	0.13	0.054	0.031
15...	73.	23.	7.3	2.3	0.75	0.25	0.093	0.043	0.027
20...	50.	16.	5.1	1.6	0.52	0.18	0.070	0.036	0.025
25...	35.	11.	3.5	1.1	0.37	0.13	0.055	0.031	0.024
30...	25.	7.9	2.5	0.81	0.27	0.099	0.045	0.023	0.022

10 mg/l nitrate nitrogen (N) for domestic water supply (health).

Since water quality standards experience revisions and upgrading from time to time, following procedures set forth in the Clean Water Act, individual entries in this digest may be superseded. As these revisions are accomplished and allowing for the States to revise their standards accordingly, this digest will be updated and reissued. Because this publication is not intended for use other than as a general information resource, to obtain the latest information and for special purposes and applications, the reader needs to refer to the current approved water quality standards. These can be obtained from the State water pollution control agencies or the EPA or Regional Offices.

Individual State-adopted criteria follow:

NITRATES/NITRITES/AMMONIA

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
Alabama ¹	Not specified	All
Alaska ²	Not specified	All
Arizona ³	<p>A. The mean annual total nitrate concentrations of the following waters shall not exceed the values given below nor shall the total nitrate concentrations of more than 10 percent of the samples in any year exceed the 90 percent values given below. Unless otherwise specified, indicated values also apply to tributaries to the named waters.</p> <p>Total nitrates as NO₃ mg/l</p> <p>4 Mean annual 7 90 pct-value</p> <p>5 Mean annual</p> <p>5 Mean annual 7 90 pct-value</p> <p>5 Mean annual 7 90 pct-value</p> <p>B. The above standards are intended to protect the beneficial uses of the named waters. Because regulation of nitrates and phosphates alone may not be adequate to protect waters from eutrophication, no substance shall be added to any surface water which produces aquatic growth to the extent that such growths create a public nuisance or interference with beneficial uses of the water defined and designated in Reg. 6-2-6.3.</p>	<p>Colorado River from Utah border to Willow Beach (main stem)</p> <p>Colorado River from Willow Beach to Parker Dam (main stem)</p> <p>Colorado River from Parker Dam to Imperial Dam (main stem)</p> <p>Colorado River from Imperial Dam to Morelos Dam (main stem)</p>

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
Connecticut ⁶	Not specified	All
Delaware ⁸	Ammonia - N 0.4	Public water supply
	Total nitrogen 3.0	Public water supply
Florida ⁷	Nitrate - 10.0 as N or that concentration determined in Nutrients below	Public water supply
	Nitrite - Not specified	All
	Ammonia (un-ionized) 0.02	Public water supply, shellfish, recreation
	Nutrients - In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora and fauna.	Public water supply, shellfish, recreation
Georgia ⁸	Not specified	
Hawaii ⁹	Total nitrogen, not greater than 0.10 mg/l	Class AA
	Total nitrogen, not greater than 0.15 mg/l	Class A
	Total nitrogen, not greater than 0.20 mg/l	Class B
Idaho ¹⁰	Not specified	All
Illinois ¹¹	Ammonia (as N) 1.5 mg/l	All waters except secondary contact and indigenous aquatic life and Lake Michigan
	Ammonia Nitrogen as N. (Storet No. 00610). No effluent from any source which discharges to the Illinois River, The DesPlaines River downstream of its confluence with the Chicago River System, or the Calumet River System, and whose untreated waste load is 50,000 or more population equivalents shall contain more than 2.5 mg/l of ammonia nitrogen as N -	Secondary contact and indigenous aquatic life waters

State

Criteria Values in mg/l

Designated Stream Use

Illinois
(con't)

during the months of April through October, or 4 mg/l at other times, after December 31, 1977. Sources discharging to any of the above waters and whose untreated waste load cannot be computed on a population equivalent basis comparable to that used for municipal waste treatment plants and whose ammonia nitrogen discharge exceeds 100 pounds per day shall not discharge an effluent of more than 3.0 mg/l of ammonia nitrogen after December 31, 1974.

0.02 mg/l

All Lake Michigan Waters

10.0 mg/l Nitrate-Nitrogen

Public and Food Processing water supply

1.0 mg/l Nitrite-Nitrogen

Public and Food Processing water supply

Indiana¹²

The bioassay criterion for toxic substances of 1/10 x 96 hr TLM applies to ammonia in all waters except those listed in the specific standards as follows:

Unionized Ammonia

0.03 mg/l - Monthly Ave.

0.1 mg/l - Daily Max.

Inner Harbor, Gary Harbor, Burns Harbor

0.02 mg/l Monthly Ave.

0.05 mg/l - Daily Max.

Lake Michigan

1.5 mg/l total Ammonia Nitrogen

Grand Calumet River and Indiana Harbor Ship Canal

0.02 mg/l Unionized Ammonia

Wolf Lake and Wolf Lake Harbor

Ammonia

Toxic Substances: The concentration of toxic substances shall not exceed those values listed in the United States Environmental Protection Agency Administrator's Quality Criteria for Water 1976 for the protection of sensitive aquatic life.

(For Ammonia this value is 0.02 mg/l NH₃)

Natural Spawning and Rearing or Imprinting Areas for Salmonid Fishes

Toxic Substances: Not to exceed one-tenth of the 96-hour median tolerance limit of salmonid fishes or the natural

Migration Routes for Salmonid Fishes

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
Indiana (con't)	<p>biota obtained from continuous flow bioassays where the dilution water and toxicant are continuously renewed, except that other lower application factors may be used in specific cases when justified on the basis of available evidence.</p> <p>Nitrates and Nitrites: Plant Nutrients: Free from substances attributable to municipal, industrial, agricultural or other sources in concentrations or combinations which will cause or contribute to the growth of aquatic plants or algae in such degree as to create a nuisance, be unsightly or deleterious, or be harmful to salmonid fishes or the natural biota. (Stream Pollution Control Board of the State of Indiana: SPC 12R. Sec.B; filed May 26, 1978, 3:30 PM 1 IR 100)</p> <p>Plant Nutrients: Free from substances attributable to municipal, industrial, agricultural or other sources in concentrations or combinations which will cause or contribute to the growth of aquatic plants or algae in such degree as to create a nuisance, be unsightly or deleterious, or be harmful to salmonid fishes or the natural biota.</p>	<p>Natural Spawning and Rearing or Imprinting Areas for Salmonid Fishes</p> <p>Migration Routes for Salmonid Fishes</p>
Iowa ¹³	<p>Ammonia (N) 5 (Nov 1 - March 31) 2 (April 1 - Oct. 31)</p> <p>2.5 (Nov.1 - March 31) 1.0 (April 1 - Oct. 31)</p> <p>Nitrate (NO₃) 45</p> <p>Nitrite - Not specified</p>	<p>Warm water fish and aquatic life, secondary recreation</p> <p>Cold water fish and aquatic life, secondary recreation.</p> <p>Public water supply</p> <p>All</p>
Kansas ¹⁴	<p>Ammonia: Man-made sources shall not cause the undissociated ammonium hydroxide concentration of waters of the state to exceed 0.15 mg/l as N.</p>	<p>All</p>

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
Kansas (con't)	Nitrites - Not specified	All
Kentucky ¹⁵	Ammonia 0.05	All
Louisiana ¹⁶	Not specified	All
	Nutrients - the naturally occurring nitrogen phosphorous ratio shall be maintained.	
Maine ¹⁷	Not specified	All
Maryland ¹⁸	Not specified	All
	The state recognizes that certain waters of the State are eutrophic or are approaching eutrophic conditions. All discharges to waters which are eutrophic or potentially eutrophic, when so identified by the State, shall be treated as necessary to reduce eutrophic effects. The State shall require that wastewaters, containing nutrients which cause or may cause eutrophication be given advanced waste treatment prior to discharge, or be disposed of by spray irrigation on land, or by other practicable procedures which will avoid direct discharge to surface waters.	
Massachusetts ¹⁹	Nitrate: 10	Public water supply
	The discharge of nutrients, primarily phosphorus or nitrogen, to waters of the Commonwealth will be limited or prohibited by the Division as necessary to prevent excessive eutrophication of such waters. There shall be no new or increased discharges of nutrients into lakes and ponds, or tributaries thereto. Existing discharges containing nutrients which encourage eutrophication or growth of weeds or algae shall be treated. Activities which may result in non-point discharges of nutrients shall be conducted in	

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
Massachusetts (con't)	accordance with the best management practices reasonably determined by the Division to be necessary to preclude or minimize such discharges of nutrients.	
Michigan ²⁰	Not specified	All
	Nutrients originating from domestic, industrial, municipal or domestic animal sources shall be limited to the extent necessary to prevent stimulation of growths of aquatic rooted, attached and floating plants, fungi or bacteria which are or may become injurious to the designated uses of the waters of the state.	All
	(1) Toxicity of undefined toxic substances not specifically included in subrules (2) and (3) shall be determined by development of 96-hour TLM's or other appropriate effect and points obtained by continuous flow or <u>in situ</u> bioassays using suitable test organisms. Concentrations of undefined toxic substances in the waters of the State shall not exceed safe concentrations as determined by applying an application factor, based on knowledge of the behavior of the toxic substances and the organisms to be protected in the environment, to the TLM or other appropriate effect end point.	
	(2) For all waters of the State, unless on the basis of recent information, a more restrictive limitation is required to protect a designated use, concentrations of defined toxic substances, including heavy metals, shall be limited by application of the toxic substances, recommendations contained in the chapter on Freshwater Organisms, "Report of the National Technical Advisory Committee to the Secretary of the Interior, Water Quality Criteria, 1968," or by application of any toxic effluent standard, limitation or prohibition promulgated by the Administrator of the United States Environmental Protection Agency pursuant to section 307(a) of the United States Public Law 92-500, whichever is more restrictive.	

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
Michigan (con't)	(3) In addition to the standards prescribed in subrules (1) and (2), waters of the State used for public water supply shall, at the point of water intake, not exceed the permissible inorganic and organic chemicals criteria for raw public water supply in "Report of the National Technical Advisory Committee to the Secretary of the Interior, Water Quality Criteria, 1968," except that chlorides shall be limited to the same extent as prescribed by rule 1051(2).	
Minnesota ²¹	Nitrates (NO ₃) 45.0	Domestic water supply Classes A, B, and C
	0.2 Ammonia (N)	Fisheries and recreation (Class A)
	1.0	Fisheries and recreation (Class B)
	1.5	Fisheries and recreation (Class C)
	Unspecified toxic substances - none at levels harmful either directly or indirectly.	Agriculture and wildlife (Class B)
Mississippi ²²	Not specified	All
Missouri ^D	0.1 Ammonia nitrogen 0.02	Aquatic life Coldwater fishery
	10.0 Nitrate nitrogen	Drinking water supply
Montana ²³	Not specified	All
Nebraska ²⁴	Ammonia as N- Seasonal limits assigned to each designated stream segment with limits ranging from 1 to 6 mg/L.	All
Nevada ²⁵	Nitrates (NO ₃) 0.8 - 7.66 Single Value	Variable
	.07-5.0 Annual average	Variable

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
Nevada (con't)	Nitrates (NO ₃) 1.0 - 5.0 Single Value	Variable
	.09 - 1.5 Annual Average	Variable
	Single value and annual average varies for each basin. See Water Pollution Rules, Table 1 thru 53 for specific rivers, lakes, and streams.	
New Hampshire ²⁶	Not specified	All
New Jersey ²⁷	Ammonia or ammonium compounds: None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the waters unsuitable for the designated uses. Where sources of public water supply is potential use, none which would cause standards for drinking water to be exceeded after appropriate treatment.	All
	Nitrate Nitrogen 2.0	All uses in FW-central Pine Barrens
	3.0	All uses in FW-lower Mullica and Wading Rivers Central Pine Barrens.
New Mexico ²⁸	Not specified	All
	Surface waters shall be free of nitrogen and other dissolved gasses at levels above 110% saturation when supersaturation is attributable to municipal, industrial or other discharges.	
New York ²⁹	Nitrates: Not specified	All
	Nitrites: Not specified	All
	Ammonia or ammonium compounds: 2.0 as NH ₃ at pH of 8.0 or above	Water supply source for drinking, culinary or food processing; fish life

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
North Carolina ³⁰	10.0 Nitrate nitrogen	Drinking water supply (treatment plus disinfection)
North Dakota ³¹	Nitrates: 1.0 - 1.5 (depending upon type of drinking water treatment process utilized)	All
	NO ₃ as N: 0.375 (goal)	All lake uses
Ohio ³²	Ammonia: 0.1 - 13.0 depending upon temperature and pH	All except Ohio River uses
	The concentration of un-ionized ammonia (NH ₃) shall not exceed 0.05 mg/l, un-ionized ammonia shall be determined for values for total ammonia N, pH and temperature and the following equation: Un-ionized ammonia = $\frac{1.3(\text{total ammonia-N})}{1 + 10^{(\text{pK}_a - \text{pH})}}$ where $\text{pK}_a = 0.0902 + \frac{2730}{273.2 + T}$ and T = Temperature in degrees C	All Ohio River uses
	Nitrate-N plus Nitrite-N: 10.0	All Ohio River uses
	Nitrite-N: 1.0	All Ohio River uses
	Nitrate-N: 10.0	Public water supply
	Nitrates plus nitrites: 100.0	Agricultural water supply
	Ammonia as Nitrogen 0.2 - 13.0 mg/l depending on temperature and pH	Warm water habitat
	0.1 - 6.5 mg/l depending on temperature and pH	Lake Erie, exceptional warm water and cold water habitat
	1.5 - 12.8 mg/l depending on temperature and pH	Seasonal warm water habitat
	0.2 - 13.0 mg/l depending on temperature and pH except as indicated for specific streams	limited warm water habitat
	Nitrate - N; 10.0 mg/l	Lake Erie and public water supply
	Nitrates plus nitrites: 100.0 mg/l	Lake Erie and agricultural water supply

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
Ohio (con't)	Ammonia not greater than 12.0 mg/l from 12/1/74 to 6/30/76; nor greater than 8.0 mg/l from 7/1/76 to 1/1/79	Lower Cuyahoga River
	Toxic substances less than 1/10 x 96 hr TLM (Applies to Ammonia)	Mahoning River
Oklahoma ³³	Nitrates as N: 10.0	Drinking water supply
Oregon ³⁴	Not specified	All
Pennsylvania ³⁵	Nitrite plus Nitrate: 10.0 (as nitrogen)	All
	Ammonia nitrogen: 0.5 - 1.5 Note: See Drainage lists A through E of Pennsylvania Water Quality Standards for applicable uses and streams	
Rhode Island ³⁶	Not specified	All
	Chemical constituents narrative: bio-assays shall be performed as required.	Fisheries (fresh water)
	Chemical constituents narrative: the limit prescribed by the USEPA will be used where not superseded by more stringent state requirements.	Public drinking water supplies (fresh water)
South Carolina ³⁷	Not specified	All
South Dakota ³⁸	10.0 Nitrates	Domestic water supply
	50.0	Wildlife propagation
	0.02 un-ionized Ammonia (as N)	Domestic water supply, cold water fish
	0.04 un-ionized ammonia (as N)	Warm water fish (permanent and semi-permanent)
	0.05	Warm water fish (marginal)

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
South Dakota (con't)	Nitrites: Not specified	All
Tennessee ³⁹	Not specified	All
Texas ⁴⁰	Not specified	All
Utah ⁴¹	NH ₃ as N 0.02 (un-ionized) NO ₃ as N 0.02	Aquatic life Aquatic life, recreation and aesthetics
Vermont ⁴²	There shall be no discharge of wastes to Class A waters that do not meet or exceed the technical and other requirements for such waters nor shall there be any discharge of wastes containing any form of nutrients which would encourage eutrophication or growth of weeds or algae. There shall be no new or increased discharge of wastes after May 27, 1971 containing any form of nutrients which would encourage eutrophication or growth of weeds and algae in any lake, pond or reservoir. Any discharge of wastes existing prior to May 27, 1971 containing soluble or other nutrients which would encourage eutrophication or growth of weeds and algae in any lake, pond, or reservoir shall receive the highest practical degree of treatment currently available to remove such nutrients.	All
Virginia ⁴³	Nitrates plus nitrites: 10.0 (as N)	Public water supply
Washington ⁴⁴	Not specified	All
West Virginia ⁴⁵	45.0 Nitrates	All
Wisconsin ⁴⁶	NH ₃ - N 3.0 mg/l during warm temperature 6.0 mg/l during cold temperatures	Intermediate aquatic life waters

<u>State</u>	<u>Criteria Values in mg/l</u>	<u>Designated Stream Use</u>
Wyoming ⁴⁷	0.02 Ammonia as (N)	All cold water fisheries
American Samoa ^E	The naturally occurring atomic ratio of NO ₃ -N to PO ₄ -P in a body of water will be maintained. Similarly, the ratio of inorganic phosphorus (orthophosphate) to total phosphorus (the sum of inorganic phosphorus, dissolved organic phosphorus, and particulate (phosphorus) will be maintained in the ratio and amount as it occurs in the receiving waters naturally.	All
District of Columbia ⁴⁸	Ammonia - 0.02 mg/l as unionized ammonia	All waters
	Nitrates/Nitrites - 10 mg/l max. as nitrate (N)	Domestic water supply
Guam ^F	Total nitrogen shall not exceed 0.40 mg/l	AA
	Total nitrogen shall not exceed 0.75 mg/l	A, 2b-I, 2b-II, C
	Total nitrogen shall not exceed 1.5 mg/l	2a-I, 2a-II
Puerto Rico ⁴⁹	10.0 Nitrate plus Nitrite (as N)	All surface waters
	3.0 Nitrogen (NO ₂ , NO ₃ , NH ₃)	All coastal waters
Trust Territories ^G	0.01 Ammonia (N)	Drinking water supply
	The naturally occurring ratio of the concentrations of nitrogen to phosphorus will be maintained in all waters.	All
Virgin Islands ^H	Not specified	All

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Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item I , March 14, 1986, EQC Meeting

City of Klamath Falls Petition for 401 Certification Rules
Amendment (Salt Caves).

Background

The City of Klamath Falls has requested the Environmental Quality Commission to reconsider denial of its previous petitions, reconsider adoption of 401 certification rules, and modify 401 certification rules in OAR Chapter 340, Division 48, by adopting a new OAR 340-48-025(h) which provides the following:

- (h) Projects exempt from the requirements of Chapter 569, Oregon Laws 1985 under Section 27 of such Chapter shall be exempt from the requirements of OAR 340-48-025(2)(f)(C) and (D), OAR 340-48-025(2)(g), and OAR 340-48-020(7)(i).

The petition was received January 14, 1986 (Attachment A). The Department decided to treat the petition as a new petition for rulemaking, although it is primarily a petition for reconsideration and technically may not require any further action by the Department or Commission. Oregon Administrative Rules 340-11-047, which deals with petitions for rulemaking, requires that the Commission take action on any petition to promulgate, amend, or repeal rules, within thirty (30) days after the submission of a properly drafted petition. The petitioner has verbally agreed to allow the Commission to postpone its decision until the March 14, 1986 meeting. The Department mailed the petition together with the public notice (Attachment B) to all known parties of interest on February 14, 1986.

Those projects which are exempt from Chapter 569, Oregon Laws 1985, as specified in Section 27 of that law are: "... any hydropower project in excess of 25 megawatts for which funding has been approved by the governing body of a city on or before May 15, 1985."

The only proposed project meeting that exemption is the Salt Caves Project. Therefore, the petitioner is requesting, that once a new certification

request has been received, the Department not consider certain portions of OAR Chapter 340, Division 48 as a condition for water quality certification required by Section 401 of the Clean Water Act.

Those sections of the rules for which the petitioner is requesting exemption are as follows:

1. OAR 340-48-020(7)(i) which requires the Department's evaluation of a project to include evidence of the project's compliance with standards established in Sections 3 and 5 of Chapter 569, Oregon Laws 1985 and rules adopted by the Water Resources Commission and the Energy Facility Siting Council implementing those standards.
2. OAR 340-48-025(2)(f)(C) which requires the Department's certification to contain findings that the project is consistent with the standards established in Sections 3 and 5 of Chapter 569, Oregon Laws 1985 and rules adopted by the Water Resources Commission and the Energy Facility Siting Council implementing those standards.
3. OAR 340-48-025(2)(f)(D) which requires the Department's certification to contain findings that the 'proposed' project is consistent with standards of other state and local agencies that the director determines are other appropriate requirements of State Law according to Section 401 of the Clean Water Act.
4. OAR 340-48-025(2)(g) which requires, that for projects requiring a site certificate from the Energy Facility Siting Council or a water appropriation permit from the Water Resources Commission, DEQ shall include a condition requiring such certificate or permit to be obtained prior to initiating the activity for which certification is granted.

Petitioner's Arguments

On Items 1 and 2, above, the petitioner argues that, since Chapter 569 Oregon Laws 1985 has exempted certain projects from the requirements of that law, the petitioner should be exempt from DEQ rules which require conformance to the requirements of that law and rules promulgated pursuant thereto. The petitioner admits that it was made clear at the November 22, 1985 Commission meeting that OAR 340-48-020(7)(i) and OAR 340-48-025(2)(f)(C) would not be applied to projects exempt from Chapter 569, Oregon Laws 1985 (H.B. 2990). However, they feel that the modification would clarify the regulations.

On Items 3 and 4, above, the petitioner argues that the site certificate, water appropriation permit, and other state requirements which the director finds appropriate, are not water quality issues and should not be required as part of the water quality certification. The petitioner argues that Section 401 does not permit the Commission to include non-water quality conditions in Section 401 certifications. The petitioner presented similar arguments regarding this issue in their September 20, 1985 petitions.

They also argue that if the Commission is basing their authority to require a site certificate and water appropriation permit on H.B. 2990, then those projects exempt from the H.B. 2990 requirements should also be exempt from OAR 340-48-025(2)(f)(D) and OAR-48-025(2)(g).

Department's Analysis

It is the Department's judgment that the Commission has made it clear that those facilities exempted from meeting the requirements of Chapter 569, Oregon Laws 1985, would also be exempted from OAR 340-48-020(7)(i) and OAR 340-48-025(2)(f)(g). This interpretation and declaration by the Commission should be sufficient without adding the exemption language to the rules.

During the public participation process and as part of their petitions filed September 20, 1985, the petitioner has argued that the 401 certification process should be restricted to water quality issues and should not be dependent upon independent requirements of other agencies. These arguments have already been considered by the Commission in adoption of the rules. There have been no new arguments presented which have convinced the Department that the rules, as adopted, are not appropriate. The requirements for a water appropriation permit and site certificate are existing statutory requirements and were not adopted as part of Chapter 569, Oregon Laws 1985. Therefore, passage of Chapter 569, Oregon Laws 1985 does not provide any justification for exemption.

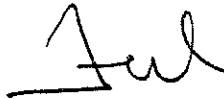
Summation

1. The City of Klamath Falls has petitioned the Commission to modify the Section 401 Certification rules adopted November 22, 1985, to exempt those projects exempted from the requirements of Chapter 569, Oregon Laws 1985, from the requirements of OAR 340-48-020(7)(i), OAR 340-48-025(2)(f)(C) and (D), and OAR 340-48-025(2)(g).
2. The petitioner verbally agreed to delaying consideration of its petition until the regularly scheduled Environmental Quality Commission meeting on March 14, 1986.

3. Copies of the petition together with a public notice were mailed to known parties of interest on February 14, 1986.
4. The Salt Caves hydroelectric project is the only project known to be exempted from Chapter 569, Oregon Laws 1985.
5. The Commission made it clear at the November 22, 1985, EQC meeting that OAR 340-48-021(7)(i) and OAR 340-48-025(2)(f)(C) would not be applied to projects exempt from Chapter 569, Oregon Laws 1985.
6. The petitioner has previously argued that the requirements of OAR 340-48-0256(2)(f)(D) and OAR 340-48-025(2)(g) were requirements outside the realm of Section 401 certification.
7. Having considered those arguments the Commission adopted the rules November 22, 1985.

Director's Recommendation

The Director recommends that the Commission deny the petition and direct the Department to execute a denial order incorporating the findings and reasons of the staff report.



Fred Hansen

Attachments: A. Petition with attachments
B. Public Notice

Charles K. Ashbaker:h
229-5325
February 19, 1986
WH615

BEFORE THE DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE ENVIRONMENTAL QUALITY COMMISSION OF THE STATE OF OREGON

OFFICE OF THE DIRECTOR

IN THE MATTER OF THE ADOPTION)	PETITION BY THE CITY OF
OF RULES FOR GRANTING)	KLAMATH FALLS FOR
WATER QUALITY COMPLIANCE)	RECONSIDERATION OF DENIAL OF
CERTIFICATION PURSUANT TO)	PETITIONS AND OF ADOPTION OF
REQUIREMENTS OF SECTION 401)	"PROCEDURAL RULES" WITH
OF THE FEDERAL CLEAN WATER ACT)	RESPECT TO SECTION 401
)	CERTIFICATIONS

On September 20, 1985, the City of Klamath Falls filed two petitions with the Environmental Quality Commission ("EQC") and the Department of Environmental Quality ("DEQ") with respect to EQC's and DEQ's requirements for certifications under section 401 of the Federal Water Pollution Control Act, 33 U.S.C. § 1341. By order dated October 21, 1985, this Commission denied the City's petitions, but indicated that certain matters addressed in those petitions--respecting requirements for section 401 certification not relating to water quality--would be addressed at EQC's November 22, 1985 regular meeting. At such EQC November 22, 1985 meeting, the Commission, in effect, partially rejected the City's contentions and adopted requirements for section 401 not relating to water quality. These requirements are contained in OAR 340-48-025(2)(f)(C) and (D), OAR 340-48-025(g), and OAR 340-48-020(7)(i) (the Department's procedural rules are attached hereto as Attachment 1). ^{1/}

^{1/} The Commission's October 21, 1985 order also indicated that the substance of the City's concerns related to water quality would be taken up at a November 21, 1985 work session of the Commission. At that work session, the Commission de-
(continued)

The City respectfully requests, for the reasons set forth below, that the EQC reconsider adoption of these rules. The City further requests that EQC modify these rules by adopting a new OAR 340-48-025(h) providing as follows:

(h) Projects exempt from the requirements of Chapter 569, Oregon Laws 1985 under section 27 of such Chapter shall be exempt from the requirements of OAR 340-48-025(2)(f)(C) and (D), OAR 340-48-025(2)(g), and OAR 340-48-020(7)(i).

The above cited sections of DEQ's new procedural rules, in essence, set forth three non-water quality requirements in section 401 certifications. To receive final section 401 certification from DEQ an applicant must, in addition to meeting DEQ's water quality standards:

(a) receive a site certificate from EFSC and a water appropriation permit from WRC. See OAR 340-48-025(2)(g).

(b) comply with standards established in H.B. 2990 and rules adopted by the Water Resources Commission ("WRC") and Energy Facility Siting Council ("EFSC") implementing such standards. See OAR 340-48-025(2)(f)(C) and OAR 340-48-020(7)(i).

(c) comply with other standards of state and local agencies as the Director deems appropriate. See OAR 340-48-025(2)(f)(D).

We examine these requirements below and the reasons why each should not be applied to projects exempt under Chapter 569, Oregon Laws 1985 (H.B. 2990, attached hereto as Attachment 2).

clined to disturb its October 21, 1985 order. This petition for reconsideration does not address the Commission's October 21, 1985 order insofar as such order relates to the City's water quality concerns. However, by not so doing, the City does not waive such issues.

I

SITE CERTIFICATE/WATER APPROPRIATION
PERMIT REQUIREMENT

As noted, OAR 340-48-025(2)(g) provides that section 401 certifications for certain projects will be issued with conditions stating that the applicant must obtain a site certificate from EFSC and a water appropriation permit from WRC.

As discussed at EQC's November 22, 1985 meeting and in the Department's Report on Agenda Item M for that meeting (at pp. 3-6), there are three possible legal bases for requiring such conditions: they are required or allowed under section 401; they are required under H.B. 2990; or they are required by the statute under which EFSC is organized. We do not believe that any of these legal justifications provide a valid basis to apply the site certificate/water appropriation permit condition to projects exempt under H.B. 2990.

First, as to the argument that the site certificate/water appropriation permit condition is allowed or required under section 401, we have set forth elsewhere our arguments that section 401 does not permit this Commission to include non-water quality conditions in section 401 certifications and we need not repeat them here. See our September 20, 1985 Petitions at pp. 20-21. We would like, however, to point out how broadly section 401 must be interpreted to allow this Commission to condition section 401 certifications on receipt of a site certificate and a water appropriation permit.

In order to issue a site certificate, for instance, EFSC must find, among other things, that there is a need for the project power (see OAR 345-78-030); that such project is not located in and will not negatively affect state or federal parks, refuges or experimental areas or areas having unique "wildlife, geologic, historic, botanical, research or recreational values" (see OAR 345-78-040(2)); that such project will not negatively impact fish and wildlife (see OAR 345-78-040(3)-(7)); that such project has been determined by the appropriate local body to be in compliance with the local land use plan (see OAR 345-78-042); that such project will not likely cause significant adverse impacts to historical or archaeological sites (see OAR 345-78-043); that the project developers are financially assured of completing their project (see OAR 345-78-043); and that the applicant will mitigate any socio-economic impacts caused by the project (see OAR 345-78-060). WRC has many of the same requirements. See OAR 690-74-005, et seq. Obviously, many of these standards are far afield of those necessary to achieve the purposes of section 401, that is, preservation of water quality.

This Commission determined at its November 22, 1985 meeting not to adopt a land use requirement for section 401 applicants. We respectfully suggest, for the same reasons that motivated that decision, that this Commission should not, indeed may not, read section 401 as giving it authority to condition section 401 certifications on an applicant meeting all of EFSC's

and WRC's non-water quality standards. Section 401 is simply not that broad a grant of authority. ^{2/}

Second, as to the argument that H.B. 2990 requires this Commission to adopt the site certificate/water appropriation permit condition, we would note that section 7 of H.B. 2990, which sets forth the provisions of that Act which are applicable to section 401 proceedings, does not directly set forth such a requirement. However, to the extent this Commission believes that sections 7(c) or (d) of that Act indirectly requires it to impose this condition (a belief which we do not share), we respectfully suggest that an exemption be provided for projects exempted under section 27 of that Act. The exemption under section 27 was adopted because it was thought unfair to impose new requirements on ongoing projects. If this Commission relies on H.B. 2990 in imposing its new site certificate/water appropriation permit condition, it would be both fair and logical not to apply such condition to projects as to which H.B. 2990 does not apply.

Third, as to the argument that the statute under which EFSC is organized requires such a condition, we recognize that the Attorney General's office has issued an opinion on this

^{2/} As noted, in order to obtain a site certificate from EFSC an applicant must obtain a statement from the appropriate local government that the proposed project complies with the local land use plan. Thus, despite the fact that it eliminated such a land use statement as a direct condition to a section 401 certification, this Commission, by requiring certain hydroelectric developers to obtain EFSC site certificates, continues to condition certain of its section 401 certifications on receipt of a land use statement.

subject (No. Op.-5796, March 26, 1985, attached hereto as Attachment 3) and that this Commission must follow it. We do not, however, believe that such opinion requires or justifies the site certificate/water appropriation permit condition.

The Attorney General's Opinion analyzed ORS 469.400(5), which provides, in effect, that if EFSC issues a site certificate on a project then all other Oregon agencies must issue any other applicable permits. The Attorney General's office concluded as follows:

OPINION: You ask whether the Department of Environmental Quality (DEQ) is bound by the terms of an Energy Facility Siting Council (EFSC) certificate when considering whether to certify compliance with water quality standards under section 401 of the Clean Water Act. (33 USC § 1341). In our opinion, DEQ and the Environmental Quality Commission (EQC) are bound provided either that EFSC's findings show that the facility will comply with the federally approved water quality standards administered by DEQ or that the site certificate requires such compliance.

Opinion at 1 (footnotes omitted).

As can be seen, this opinion, as does ORS 469.400(5), deals with EFSC's preemptive power over DEQ if EFSC chooses to issue a site certificate. If, in issuing a site certificate, EFSC finds that a project meets the federally approved water quality standards administered by DEQ, then DEQ is bound to issue a section 401 certification. However, neither ORS 469.400(5) nor the opinion states that if EFSC denies a site certificate then DEQ is bound to deny a section 401 certification. But under DEQ's site certificate/water appropriation permit condition, DEQ would be bound to deny a final section 401 certificate if EFSC

declines to issue a site certificate. Such condition, therefore, is not required of DEQ by the Attorney General's Opinion or ORS 469.400(5) and neither provides justification for it.

Moreover, even assuming for the sake of argument that the Attorney General's opinion did deal with EFSC's preemptive power when a site certificate is denied, such opinion certainly does not state that if a site certificate is denied on non-water quality grounds then DEQ must deny a section 401 certification. In fact, the opinion closely ties EFSC's preemptive power over DEQ with respect to section 401 proceedings to EFSC's applying regulations identical to DEQ's EPA-approved water quality standards. It is that factor--application by EFSC of DEQ's EPA-approved water quality standards--that causes EFSC, in the opinion of the Attorney General's office, to have preemptive power over DEQ.

However, OAR 340-48-025(2)(g), by directing DEQ to condition a section 401 certification on receipt of an EFSC certificate, would require DEQ ultimately to deny section 401 certification if an applicant did not receive a site certificate from EFSC for any reason, including non-water quality ones. For instance, under that regulation, if DEQ issues a section 401 certification and EFSC subsequently denies a site certificate solely because of project impacts on an archaeological site, then DEQ would be forced to terminate the section 401 certificate. Such a result is not required by the Attorney General's opinion,

and it is in fact at odds with it, and it is not required by ORS 469.400(5). ^{3/}

It should also be noted, of course, that neither ORS 469.500(5) nor the Attorney General's opinion applies to the WRC, and nothing in that provision or opinion would provide justification for conditioning section 401 certification on receipt of a water appropriation permit from that body.

Finally, it should be noted that by arguing herein that section 401 certifications should not be conditioned on receipt of a site certificate and a water appropriation permit, we are not arguing that hydroelectric projects should be free of those requirements. To the extent that such requirements are valid, hydroelectric projects would be subject to them, as administered

^{3/} As noted, we believe that neither ORS 469.400(5) nor the Attorney General's opinion requires DEQ to deny a section 401 certification if EFSC denies a site certificate, even if the basis of EFSC's denial is failure by the applicant to meet DEQ's EPA-approved water quality standards. Therefore, our proposed revision to DEQ's rules simply exempts projects exempt from H.B. 2990 from the site certificate/water appropriation permit condition. However, if the Commission believes that DEQ would be bound to deny a section 401 certification if EFSC finds that the applicant does not meet the EPA-approved water quality standards, we would suggest that the following language be added at the end of our new proposed OAR 340-48-025(h):

except that DEQ shall include a condition in any Section 401 certification issued to such exempt entity providing that if EFSC has adopted water quality regulations which are identical to the Commission's EPA-approved water quality regulations and if EFSC denies a site certificate on the ground that such entity failed to meet such regulations, then the Section 401 certification shall terminate.

by EFSC and WRC. We are suggesting that such conditions do not have a proper place, under section 401, under H.B. 2990 or under the opinion of the Attorney General's office, in section 401 proceedings for projects exempt under H.B. 2990.

II

STANDARDS REQUIRED BY SECTIONS
3 AND 5 OF H.B. 2990

It was made clear at the November 22, 1985 EQC meeting that OAR 340-48-020(7)(i) and OAR 340-48-025(2)(f)(C) would not be applied to projects exempt from H.B. 2990. The modification we have proposed would clarify this in the regulations.

III

OTHER APPROPRIATE STATE STANDARDS

OAR 340-48-025(2)(f)(D) is a paraphrase of section 7(d) of H.B. 2990. We recognize that the Director's November 12, 1985 report on Agenda Item No. M for the November 22, 1985 meeting, at pages 5-6, stated that these "appropriate" requirements were local land use plans or statewide planning goals, an EFSC certificate, a WRC water appropriation permit and sections 3 and 5 of H.B. 2990. Given the changes in the proposed regulations made at the November 22, 1985 meeting and for the reasons stated above, we respectfully suggest that projects exempt from H.B. 2990 also be exempt from OAR 340-48-025(2)(f)(D).

In conclusion, we believe that the modification of DEQ's "procedural" rules which we have suggested is fully justified by the reasons set forth herein.

Dated: January 10, 1986

Respectfully submitted,



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Attorneys for the City of
Klamath Falls, Oregon

ATTACHMENT 1

OREGON ADMINISTRATIVE RULES
Chapter 340, Division 48

DIVISION 48

CERTIFICATION OF COMPLIANCE WITH WATER QUALITY REQUIREMENTS AND STANDARDS.

Purpose

340-48-005 The purpose of these rules is to describe the procedures to be used by the Department of Environmental Quality for receiving and processing applications for certification of compliance with water quality requirements and standards for projects which are subject to federal agency permits or licenses and which may result in any discharge into navigable waters or impact water quality.

Definitions

340-48-010 As used in these rules unless otherwise required by context:

(1) "Certification" means a written declaration by the Department of Environmental Quality, signed by the Director, that a project or activity subject to federal permit or license requirements will not violate applicable water quality requirements or standards.

(2) "Clean Water Act" means the Federal Water Pollution Control Act of 1972, PL 92-500, as amended.

(3) "Coast Guard" means U.S. Coast Guard.

(4) "Commission" means Oregon Environmental Quality Commission.

(5) "Corps" means U.S. Army Corps of Engineers.

(6) "Department" or "DEQ" means Oregon Department of Environmental Quality.

(7) "Director" means Director of the Department of Environmental Quality or the Director's authorized representative.

(8) "Local Government" means county and city government.

Certification Required

340-48-015 Any applicant for a federal license or permit to conduct any activity, including but not limited to the construction or operation of

facilities which may result in any discharge to waters of the State, must provide the licensing or permitting agency a certification from the Department that any such activity will comply with Sections 301, 302, 303, 306, and 307 of the Clean Water Act which generally prescribe effluent limitations, water quality related effluent limitations, water quality standards and implementation plans, national standards of performance for new sources, and toxic and pretreatment effluent standards.

Application for Certification

340-48-020 (1) Except as provided in section (6) below, completed applications for project certification shall be filed directly with the DEQ.

(2) A completed application filed with DEQ shall contain, at a minimum, the following information:

- (a) Legal name and address of the project owner.
- (b) Legal name and address of owner's designated official representative, if any.
- (c) Legal description of the project location.
- (d) Names and addresses of immediately adjacent property owners.
- (e) A complete description of the project proposal, using written discussion, maps, diagrams, and other necessary materials.
- (f) Name of involved waterway, lake, or other water body.
- (g) Copies of the environmental background information required by the federal permitting or licensing agency or such other environmental background information as may be necessary to demonstrate that the proposed project or activity will comply with water quality requirements.
- (h) Copy of any public notice and supporting information, issued by the federal permitting or licensing agency for the project.
- (i) A statement from the appropriate local government whether the project is compatible with the acknowledged local comprehensive plan and land use regulations or that the project complies with statewide planning goals if the local plan is not acknowledged. If the project is not compatible or in compliance, the statement shall include reasons why it is not. If a local government is the applicant for a project for which it has also made the land use compatibility determination, the State Land Conservation and Development Department may be asked by DEQ to review and comment on the local government's compatibility determination.
- (j) Specific detailed documentation of compliance with the hydroelectric project standards established in Sections 3 and 5 of Chapter 569, Oregon Laws 1985 and rules adopted by the Water Resources Commission and Energy Facility Siting Council implementing such standards.

(3) The DEQ reserves the right to request any additional information necessary to complete an application or to assist the DEQ to adequately evaluate the project impacts on water quality. Failure to complete an application or provide any requested additional information within the time specified in the request shall be grounds for denial of certification.

(4) In order to inform potentially interested persons of the application, a public notice announcement shall be prepared and circulated in a manner

approved by the Director. Notice will be mailed to adjacent property owners as cited in the application. The notice shall tell of public participation opportunities, shall encourage comments by interested individuals or agencies, and shall tell of any related documents available for public inspection and copying. The Director shall specifically solicit comments from affected state agencies. The Director shall provide a period of not less than 30 days following the date of the public notice during which time interested persons may submit written views and comments. All comments received during the 30-day period shall be considered in formulating the Department's position. The Director shall add the name of any person or group upon request to a mailing list to receive copies of public notice.

(5) The Director shall provide an opportunity for the applicant, any affected state, or any interested agency, person, or group of persons to request or petition for a public hearing with respect to certification applications. If the Director determines that new information may be produced thereby, a public hearing will be held prior to the Director's final determination. Instances of doubt shall be resolved in favor of holding the hearing. There shall be public notice of such a hearing.

(6) For projects or activities where the Division of State Lands is responsible for compiling a coordinated state response (normally applications requiring permits from the Corps or Coast Guard), the following procedure for application and certification shall apply:

(a) Application to the Federal agency for a permit constitutes application for certification.

(b) Applications are forwarded by the Federal Agency to the Division of State Lands for distribution to affected agencies.

(c) Notice is given by the Federal Agency and Division of State Lands through their procedures. Notice of request for DEQ certification is circulated with the Federal Agency Notice.

(d) All comments including DEQ Water Quality Certification are forwarded to the Division of State Lands for evaluation and coordination of response. The Division of State Lands is responsible for assuring compatibility with the local comprehensive plan or compliance with statewide planning goals.

(7) In order to make findings required by OAR 340-48-025(2), the Department's evaluation of an application for project certification may include but need not be limited to the following:

(a) Existing and potential beneficial uses of surface or groundwater which could be affected by the proposed facility.

(b) Potential impact from the generation and disposal of waste chemicals or sludges at a proposed facility.

(c) Potential modification of surface water quality or quantity.

(d) Potential modification of groundwater quality.

(e) Potential impacts from the construction of intake or outfall structures.

(f) Potential impacts from waste water discharges.

(g) Potential impacts from construction activities.

(h) The project's compliance with plans applicable to Section 208 of the Federal Clean Water Act.

(i) The project's compliance with standards established in Sections 3 and 5 of Chapter 569, Oregon Laws 1985 and rules adopted by the Water Resources Commission and the Energy Facility Siting Council implementing such standards.

Issuance of a Certificate

340-48-025 (1) Within thirty (30) days from the time the Department determines an application is complete, it shall so notify the applicant by certified mail. Within ninety (90) days of receiving a complete application for project certification, the DEQ shall serve written notice upon the applicant that the certification is granted or denied or that a further specified time period is required to process the application. Written notice shall be served in accordance with the provisions of OAR 340-11-097 except that granting of certification may be by regular mail. Any extension of time shall not exceed 1 year from the date of filing a completed application.

(2) DEQ's Certification for a project shall contain the following information:

- (a) Name of Applicant;
- (b) Project's name and federal identification number (if any);
- (c) Type of project activity;
- (d) Name of water body;
- (e) General location;
- (f) Findings that the proposed project is consistent with:
 - (A) Rules adopted by the EQC on Water Quality;
 - (B) Provisions of Section 301, 302, 303, 306 and 307 of the Federal Water Pollution Control Act, PL 92-500, as amended;
 - (C) For hydroelectric projects, standards established in Sections 3 and 5 of Chapter 569, Oregon Laws 1985 and rules adopted by the Water Resources Commission and Energy Facility Siting Council implementing such standards;
 - (D) Standards of other state and local agencies that the director determines are other appropriate requirements of state law according to Section 401 of the Federal Water Pollution Control Act, PL 92-500, as amended.

(g) For projects requiring a site certificate from the Energy Facility Siting Council or a water appropriation permit from the Water Resources Commission, DEQ shall include a condition requiring such certificate or permit to be obtained prior to initiating the activity for which 401 certification is granted.

(3) If the applicant is dissatisfied with the conditions of any granted certification, the applicant may request a hearing before the Commission. Such requests for a hearing shall be made in writing to the Director within 20 days of the date of mailing of the certification. Any hearing shall be conducted pursuant to the rules of the Commission for contested cases.

(4) Certifications granted pursuant to these rules are valid for the applicant only and are not transferable.

Certification Delivery

340-48-030 For projects where application for certification is filed directly with DEQ by the applicant, the DEQ certification will be returned directly to the applicant. For those applications that are coordinated by the Division of State Lands, DEQ certification will be delivered to the Division of State Lands for distribution to the applicant and the federal permitting agencies as part of the State of Oregon coordinated response.

Denial of Certification

340-48-035 If the Department proposes to deny certification for a project, a written notice setting forth the reasons for denial shall be served upon the applicant following procedures in OAR 340-11-097. The written notice shall advise the applicant of appeal rights and procedures. A copy shall also be provided to the federal permitting agency. The denial shall become effective 20 days from the date of mailing such notice unless within that time the applicant requests a hearing before the Commission or its authorized representative. Such a request for hearing shall be made in writing to the Director and shall state the grounds for the request. Any hearing held shall be conducted pursuant to the rules of the Commission for contested cases.

Revocation or Suspension of Certification

340-48-040 (1) Certification granted pursuant to these rules may be suspended or revoked if the Director determines that:

- (a) The federal permit or license for the project is revoked.
- (b) The federal permit or license allows modification of the project in a manner inconsistent with the certification.
- (c) The application contained false information or otherwise misrepresented the project.
- (d) Conditions regarding the project are or have changed since the application was filed.
- (e) Special conditions or limitations of the certification are being violated.

(2) Written notice of intent to suspend or revoke shall be served upon the applicant following procedures in OAR 340-11-097. The suspension or revocation shall become effective 20 days from the date of mailing such notice unless within that time the applicant requests a hearing before the Commission or its authorized representative. Such a request for hearing shall be filed with the Director and shall state the grounds for the request. Any hearing held shall be conducted pursuant to the rules of the Commission for contested cases.

GDC:h
WH515
Revised 10/30/85

ATTACHMENT 2

63rd OREGON LEGISLATIVE ASSEMBLY—1985 Regular Session

HOUSE AMENDMENTS TO HOUSE BILL 2990

By JOINT COMMITTEE ON WATER POLICY

May 31

Amended Summary

{Declares state policy to protect natural resources and other beneficial uses of water in process of permitting activity that uses waters of this state. Prohibits Water Policy Review Board or Energy Facility Siting Council from issuing permit, license or site certificate for project that impacts certain natural resources without finding of need for additional power.}

Requires Director of Department of Environmental Quality to make certain findings before certifying federally licensed or permitted project. Makes related changes.

[Declares emergency, effective on passage.]

Declares state policy to permit siting of hydroelectric power projects subject to strict standards to protect natural resources. Prescribes minimum standards for consideration by Water Policy Review Board and Energy Facility Siting Council. Requires Department of Environmental Quality certifications under Federal Clean Water Act to be consistent with specified standards. Requires notification of landowners potentially affected.

Prescribes October 1, 1985, effective date.

- 1 On page 1 of the printed bill, line 2, delete "543.150," and insert "543.135, 543.220 and" and delete "and".
- 2 Delete line 3 and insert "; and prescribing an effective date."
- 3 Delete lines 5 through 26 and pages 2 through 7 and insert:
- 4 "**SECTION 1.** Sections 2 and 3 of this Act are added to and made a part of ORS 543.010 to 543.620.
- 5 "**SECTION 2.** The Legislative Assembly declares that it is the policy of the State of Oregon:
- 6 "(1) To protect the natural resources of this state from possible adverse impacts caused by the use of the
- 7 waters of this state for the development of hydroelectric power.
- 8 "(2) To permit siting of hydroelectric projects subject to strict standards established to protect the natural
- 9 resources of Oregon.
- 10 "(3) To require the Water Policy Review Board, the Energy Facility Siting Council, the Department of
- 11 Environmental Quality and other affected state agencies to participate to the fullest extent in any local, state or
- 12 federal proceedings related to hydroelectric power development in order to protect the natural resources of
- 13 Oregon.
- 14 "**SECTION 3.** (1) In order to carry out the policy set forth in section 2 of this 1985 Act, the following
- 15 minimum standards shall apply to any action of the Water Policy Review Board relating to the development of
- 16 hydroelectric power in Oregon:
- 17 "(a) The anadromous salmon and steelhead resources of Oregon shall be preserved. The board shall not
- 18 approve activity that may result in mortality or injury to anadromous salmon and steelhead resources or loss of
- 19 natural habitat of any anadromous salmon and steelhead resources except when an applicant proposes to modify
- 20 an existing facility or project in such a manner that can be shown to restore, enhance or improve anadromous fish
- 21 populations within that river system.

1 “(b) Any activity related to hydroelectric development shall be consistent with the provisions of the
2 Columbia River Basin Fish and Wildlife Program providing for the protection, mitigation and enhancement of
3 the fish and wildlife resources of the region as adopted by the Pacific Northwest Electric Power and Conservation
4 Planning Council pursuant to Public Law 96-501.

5 “(c) Except as provided in this paragraph, no activity may be approved that results in a net loss of wild game
6 fish or recreational opportunities. If a proposed activity may result in a net loss of any of the above resources, the
7 board may allow mitigation if the board finds the proposed mitigation in the project vicinity is acceptable.
8 Proposed mitigation which may result in a wild game fish population or the fishery the wild game fish population
9 provides, being converted to a hatchery dependent resource is not acceptable mitigation. A water dependent
10 recreational opportunity must be mitigated by another water dependent recreational opportunity. Mitigation of
11 water dependent recreational opportunities which, in the judgment of the board, are of state-wide significance
12 with a recreational opportunity that is readily available on other waters of this state is not acceptable mitigation.
13 In deciding whether mitigation is acceptable, the board shall consult with other local, state and federal agencies.

14 “(d) Other natural resources in the project vicinity including water quality, wildlife, scenic and aesthetic
15 values, historic, cultural and archaeological sites, shall be maintained or enhanced. No activity may be approved
16 which, in the judgment of the board after balancing gains and losses to all affected natural resources, may result in
17 a net loss of natural resources. In determining whether the proposed activity may result in a net loss of natural
18 resources, the board may consider mitigation if the board determines the proposed mitigation in the project
19 vicinity is acceptable. Mitigation may include appropriate measures considered necessary to meet the net loss
20 standard. In determining whether mitigation is acceptable the board shall consult with appropriate state, federal
21 and local agencies.

22 “(2) The board shall adopt all necessary rules to carry out the policy set forth in section 2 of this 1985 Act and
23 to implement the minimum standards set forth in subsection (1) of this section. In the absence of implementing
24 rules, any action of the board relating to hydroelectric development shall comply with the standards as set forth in
25 this section. In adopting rules under this subsection, the board shall consult with the Energy Facility Siting
26 Council in order to coordinate rules adopted under this section with rules adopted by the Energy Facility Siting
27 Council under section 5 of this 1985 Act.

28 **“SECTION 4.** Section 5 of this Act is added to and made a part of ORS 469.300 to 469.570.

29 **“SECTION 5.** (1) In order to carry out the policy set forth in section 2 of this 1985 Act, the following
30 minimum standards shall apply to any action of the Energy Facility Siting Council relating to the development of
31 hydroelectric power projects in excess of 25 megawatts in Oregon:

32 “(a) The anadromous salmon and steelhead resources of Oregon shall be preserved. The council shall not
33 approve activity that may result in mortality or injury to anadromous salmon and steelhead resources or loss of
34 natural habitat of any anadromous salmon and steelhead resources except when an applicant proposes to modify
35 an existing facility or project in such a manner that can be shown to restore, enhance or improve anadromous fish
36 populations within that river system.

37 “(b) Any activity related to hydroelectric development shall be consistent with the provisions of the
38 Columbia River Basin Fish and Wildlife Program providing for the protection, mitigation and enhancement of

1 the fish and wildlife resources of the region as adopted by the Pacific Northwest Electric Power and Conservation
2 Planning Council pursuant to Public Law 96-501.

3 "(c) Except as provided in this paragraph, no activity may be approved that results in a net loss of wild game
4 fish or recreational opportunities. If a proposed activity may result in a net loss of any of the above resources, the
5 council may allow mitigation if the council finds the proposed mitigation in the project vicinity is acceptable.
6 Proposed mitigation which may result in a wild game fish population or the fishery the wild game fish population
7 provides, being converted to a hatchery dependent resource is not acceptable mitigation. A water dependent
8 recreational opportunity must be mitigated by another water dependent recreational opportunity. Mitigation of
9 water dependent recreational opportunities which, in the judgment of the council, are of state-wide significance
10 with a recreational opportunity that is readily available on other waters of this state is not acceptable mitigation.
11 In deciding whether mitigation is acceptable, the council shall consult with other local, state and federal agencies.

12 "(d) Other natural resources in the project vicinity including water quality, wildlife, scenic and aesthetic
13 values, historic, cultural and archeological sites shall be maintained or enhanced. No activity may be approved
14 which, in the judgment of the council, after balancing gains and losses to all affected natural resources, may result
15 in a net loss of natural resources. In determining whether the proposed activity may result in a net loss of natural
16 resources, the council may consider mitigation if the council determines the proposed mitigation in the project
17 vicinity is acceptable. Mitigation may include appropriate measures considered necessary to meet the net loss
18 standard. In determining whether mitigation is acceptable the council shall consult with appropriate state, federal
19 and local agencies.

20 "(2) The council shall adopt all necessary rules to carry out the policy set forth in section 2 of this 1985 Act
21 and to implement the minimum standards set forth in subsection (1) of this section. In the absence of
22 implementing rules, any action of the council relating to hydroelectric development shall comply with the
23 standards as set forth in this section. In adopting rules under this subsection, the council shall consult with the
24 Water Policy Review Board in order to coordinate rules adopted under this section with rules adopted by the
25 Water Policy Review Board under section 3 of this 1985 Act.

26 "SECTION 6. Sections 7 and 8 of this Act are added to and made a part of ORS 468.700 to 468.778.

27 "SECTION 7. The Director of the Department of Environmental Quality shall approve or deny certification
28 of any federally licensed or permitted activity related to hydroelectric power development, under section 401 of
29 the Federal Water Pollution Control Act, P.L. 92-500, as amended. In making a decision as to whether to approve
30 or deny such certification, the director shall:

31 "(1) Solicit and consider the comments of all affected state agencies relative to adverse impacts on water
32 quality caused by the project, according to sections 301, 302, 303, 306 and 307 of the Federal Water Pollution
33 Control Act, P.L. 92-500, as amended.

34 "(2) Approve or deny a certification only after making findings that the approval or denial is consistent with:

35 "(a) Rules adopted by the Environmental Quality Commission on water quality;

36 "(b) Provisions of sections 301, 302, 303, 306 and 307 of the Federal Water Pollution Control Act, P.L.
37 92-500, as amended;

1 “(c) Standards established in sections 3 and 5 of this 1985 Act and rules adopted by the Water Policy Review
2 Board and the Energy Facility Siting Council implementing such standards; and

3 “(d) Standards of other state and local agencies that are consistent with the standards of sections 3 and 5 of
4 this 1985 Act and that the director determines are other appropriate requirements of state law according to
5 section 401 of the Federal Water Pollution Control Act, P.L. 92-500, as amended.

6 “SECTION 8. Within 60 days after the Department of Environmental Quality receives notice that any
7 federal agency is considering a permit or license application related to a change to a hydroelectric project or
8 proposed hydroelectric project that was previously certified by the director of the Department of Environmental
9 Quality according to section 401 (1) of the Federal Water Pollution Control Act P.L. 92-500, as amended:

10 “(1) The director shall:

11 “(a) Solicit and consider the comments of all affected state agencies relative to adverse impacts on water
12 quality caused by changes in the project, according to sections 301, 302, 303, 306 and 307 of the Federal Water
13 Pollution Control Act, P.L. 92-500, as amended.

14 “(b) Approve or deny a certification of the proposed change after making findings that the approval or denial
15 is consistent with:

16 “(A) Rules adopted by the Environmental Quality Commission on water quality;

17 “(B) Provisions of sections 301, 302, 303, 306 and 307 of the Federal Water Pollution Control Act, P.L.
18 92-500, as amended;

19 “(C) Standards established in sections 3 and 5 of this 1985 Act and rules adopted by the Water Policy Review
20 Board and the Energy Facility Siting Council implementing such standards; and

21 “(D) Standards of other state and local agencies that are consistent with the standards of sections 3 and 5 of
22 this 1985 Act and that the director determines are other appropriate requirements of state law according to
23 section 401 of the Federal Water Pollution Control Act, P.L. 92-500, as amended.

24 “(2) On the basis of the evaluation and determination under subsection (1) of this section, the director shall
25 notify the appropriate federal agency that:

26 “(a) The proposed change to the project is approved; or

27 “(b) There is no longer reasonable assurance that the project as changed complies with the applicable
28 provisions of the Federal Water Pollution Control Act, P.L. 92-500, as amended, because of changes in the
29 proposed project since the director issued the construction license or permit certification.

30 “SECTION 9. Sections 10 to 12 of this Act are added to and made a part of ORS 543.010 to 543.620.

31 “SECTION 10. (1) Whenever the Water Resources Department receives an application to appropriate water
32 for hydroelectric power under ORS 537.140 to 537.320 or for a hydroelectric permit or license under ORS
33 543.010 to 543.620, the department shall determine whether the impacts of the project would be cumulative with:

34 “(a) Impacts of other proposed hydroelectric projects for which an application is pending before the
35 department or before the Energy Facility Siting Council under ORS 469.320 to 469.440; or

36 “(b) Existing hydroelectric projects in the same river basin.

37 “(2) If the department determines that there is no possibility that the hydroelectric projects proposed in
38 pending applications or existing projects may have cumulative effects, the department shall issue an order setting

1 forth the department's determination that there are no cumulative effects and the department's decision that
2 consolidated review is not required.

3 *(3) If the department determines that pending applications or existing projects may have cumulative
4 effects, the department shall conduct a consolidated review before approving any application in the affected river
5 basin. A consolidated review process shall be conducted as a contested case hearing under the applicable
6 provisions of ORS 183.310 to 183.550 and shall include a study of the individual and cumulative effects of
7 proposed hydroelectric projects for which applications are pending before the department or the Energy Facility
8 Siting Council and existing hydroelectric projects. In its final order on an application, the department shall
9 include its findings on cumulative impacts. The findings of the department under this section must be sufficient
10 to support the department's decision to approve or deny an application.

11 *(4) Any application for a project in the same river basin filed after the department begins a consolidated
12 review contested case hearing shall not be reviewed until the department has issued final findings on cumulative
13 effects for all projects included in the consolidated review proceeding.

14 *(5) At the request of an applicant for a permit to appropriate water for hydroelectric purposes under ORS
15 537.140 to 537.320 or for a permit or license under ORS 543.010 to 543.620, the department may immediately
16 upon receiving such application begin the consolidated review proceeding under subsection (3) of this section.

17 *SECTION 11. The Water Resources Department shall immediately initiate rulemaking proceedings
18 according to the applicable provisions of ORS 183.310 to 183.550 to implement the consolidated review process
19 under section 10 of this 1985 Act. Before adoption of the rules, the department shall submit the rules to the Joint
20 Legislative Committee on Water Policy for review and recommendation.

21 *SECTION 12. Any application pending before the Water Resources Department for which the record for
22 the hearing under ORS 537.170 or 543.225 has not been closed on or before the effective date of this Act shall be
23 subject to the consolidated review process set forth in section 10 of this 1985 Act and to rules adopted by the
24 Water Policy Review Board under section 11 of this 1985 Act.

25 *SECTION 13. Sections 14 to 16 of this Act are added to and made a part of ORS 469.300 to 469.570.

26 *SECTION 14. (1) Whenever the Energy Facility Siting Council receives an application for a site certificate
27 for a hydroelectric project under ORS 469.320 to 469.440, the council shall determine whether the impacts of the
28 project would be cumulative with:

29 *(a) Impacts of other proposed hydroelectric projects for which an application is pending before the council
30 or before the Water Resources Department under ORS 537.140 to 537.320 or 543.010 to 543.620; or

31 *(b) Existing hydroelectric projects in the same river basin.

32 *(2) If the council determines that there is no possibility that the hydroelectric projects proposed in pending
33 applications or existing projects may have cumulative effects, the council shall issue an order setting forth the
34 council's determination that there are no cumulative effects and the council's decision that consolidated review is
35 not required.

36 *(3) If the council determines that pending applications or existing projects may have cumulative effects, the
37 council shall conduct a consolidated review before issuing any site certificate for a hydroelectric project in the
38 affected river basin. A consolidated review process shall be conducted as a contested case hearing under the

1 applicable provisions of ORS 183.310 to 183.550 and shall include a study of the individual and cumulative
2 effects of proposed hydroelectric projects for which applications are pending before the council or the Water
3 Policy Review Board and existing hydroelectric projects. In its final order on a site certificate, the council shall
4 include its findings on cumulative impacts. The findings of the council under this section must be sufficient to
5 support the council's decision to issue or deny a site certificate.

6 "(4) The council shall not issue a site certificate for any application for a project in the same river basin filed
7 after the council begins a consolidated review contested case hearing until the council issues final findings on
8 cumulative effects for all projects included in the consolidated review proceeding.

9 "(5) At the request of an applicant for a site certificate for a hydroelectric project under ORS 469.320 to
10 469.440, the council may immediately upon receiving such application begin the consolidated review proceeding
11 under subsection (3) of this section.

12 "(6) The time limits for review of the applications provided by ORS 469.370 are not applicable to
13 applications for site certificates subject to this section.

14 "SECTION 15. The Energy Facility Siting Council shall immediately initiate rulemaking proceedings
15 according to the applicable provisions of ORS 183.310 to 183.550 to implement the consolidated review process
16 under section 14 of this 1985 Act. Before adoption of the rules, the council shall submit the rules to the Joint
17 Legislative Committee on Water Policy for review and recommendation.

18 "SECTION 16. Any application pending before the Energy Facility Siting Council for which the record for
19 the hearing under ORS 469.370 has not been closed on or before the effective date of this Act shall be subject to
20 the consolidated review process set forth in section 14 of this 1985 Act and to rules adopted by the council under
21 section 15 of this 1985 Act.

22 "SECTION 17. ORS 469.370 is amended to read:

23 "469.370. (1) The council shall hold public hearings in the affected area and elsewhere, as it deems necessary,
24 on the application for a site certificate. At the conclusion of its hearings the council shall either approve or reject
25 the application. The council must make its decision by the affirmative vote of at least four members, approving
26 or rejecting any application for a certificate.

27 "(2) Rejection or approval of an application, together with any conditions that may be attached to the
28 certificate, shall be subject to judicial review as provided in ORS 469.400 (1).

29 "(3) The council shall either approve or reject an application for a site certificate:

30 "(a) Within 24 months after filing an application for a nuclear installation, or for a thermal power plant,
31 other than that described in paragraph (b) of this subsection, with a name plate rating of more than 200,000
32 kilowatts:

33 "(b) Within nine months after filing of an application for a site certificate for a combustion turbine power
34 plant, a geothermal-fueled power plant or an underground storage facility for natural gas:

35 "(c) Within six months after filing an application for a site certificate for an energy facility, if the application
36 is:

37 "(A) To expand an existing industrial facility to include an energy facility;

1 “(B) To expand an existing energy facility to achieve a nominal electric generating capacity of between
2 25,000 and 50,000 kilowatts; or

3 “(C) To add generating capacity to an existing dam; or

4 “(d) Within 12 months after filing an application for a site certificate for any other energy facility.

5 “(4) The council shall reject an application for a site certificate for a hydroelectric project if the council finds
6 the project does not comply with the standards set forth in section 5 of this 1985 Act or rules adopted by the
7 council under section 5 of this 1985 Act.

8 “SECTION 18. ORS 537.160 is amended to read:

9 “537.160. (1) Subject to the provisions of subsections (2) and (3) of this section, and of ORS 537.170 to
10 537.190, the Water Resources Director shall approve all applications made in proper form which contemplate
11 the application of water to a beneficial use, unless the proposed use conflicts with existing rights.

12 “(2) No application for a permit to appropriate waste or seepage water, which is to be carried through an
13 existing ditch or canal not owned wholly by the applicant, shall be approved until the applicant has filed with the
14 director an agreement between the applicant and the owner of the ditch or canal, authorizing its use by the
15 applicant to carry the water.

16 “(3) The director shall reject every application for a permit to appropriate water in excess of a flow of 10
17 cubic feet per second, concerning which the applicant has failed, after 30 days' notice and demand from the
18 director, to furnish proof satisfactory to [him] the director of the applicant's ability to construct the proposed
19 project, and of [his] the applicant's intention in good faith to construct it with due diligence.

20 “(4) The director shall reject every application for a permit to appropriate water to develop hydroelectric
21 power if the director finds that the proposed project does not comply with the standards set forth in section 3 of
22 this 1985 Act or rules adopted by the board under section 3 of this 1985 Act.

23 “SECTION 19. ORS 537.170 is amended to read:

24 “537.170. (1) If, in the judgment of the Water Resources Director, the proposed use may prejudicially affect
25 the public interest, or is to develop hydroelectric power in excess of 100 theoretical horsepower, the Water Policy
26 Review Board shall hold a public hearing on the application on proper notice to the applicant and to anyone
27 objecting thereto.

28 “(2) If applicable, an application to appropriate water for the generation of electricity submitted under ORS
29 537.140 shall be included in the consolidated review and hearings process under section 10 of this 1985 Act.

30 “(3) If, in the opinion of the board, sufficient information is not available to enable the board to determine
31 whether or not the proposed use would impair or be detrimental to the public interest, the board may enter an
32 interim order continuing the hearing for a period not to exceed three years, unless extended by the board, in order
33 to afford all interested persons an opportunity to complete investigations to obtain the required information. The
34 interim order may specify in particular the information required for the determination by the board.

35 “[(2)] (4) If, after the hearing, the board determines that the proposed use does not comply with the standards
36 set forth in section 3 of this 1985 Act or rules adopted by the board under section 3 of this 1985 Act or would
37 otherwise impair or be detrimental to the public interest, it shall enter an order rejecting the application or

1 requiring its modification to conform to the public interest, to the end that the highest public benefit may result
2 from the use to which the water is applied. If, after the hearing, the board determines that the proposed use would
3 not impair or be detrimental to the public interest, it shall enter an order approving the application. An order
4 approving an application or requiring its modification may set forth any or all of the provisions or restrictions to
5 be included in the permit concerning the use, control and management of the water to be appropriated for the
6 project, including, but not limited to, a specification of reservoir operation and minimum releases to protect the
7 public interest.

8 * [(3)] (5) In determining whether the proposed use would impair or be detrimental to the public interest, the
9 Water Policy Review Board shall have due regard for:

10 *(a) Conserving the highest use of the water for all purposes, including irrigation, domestic use, municipal
11 water supply, power development, public recreation, protection of commercial and game fishing and wildlife, fire
12 protection, mining, industrial purposes, navigation, scenic attraction or any other beneficial use to which the
13 water may be applied for which it may have a special value to the public.

14 *(b) The maximum economic development of the waters involved.

15 *(c) The control of the waters of this state for all beneficial purposes, including drainage, sanitation and flood
16 control.

17 *(d) The amount of waters available for appropriation for beneficial use.

18 *(e) The prevention of wasteful, uneconomic, impracticable or unreasonable use of the waters involved.

19 *(f) All vested and inchoate rights to the waters of this state or to the use thereof, and the means necessary to
20 protect such rights.

21 *(g) The state water resources policy formulated under ORS 536.300 to 536.350 and 537.505 to 537.525.

22 * [(4)] (6) After the entry of the order specified in subsection [(2)] (4) of this section, the application for a
23 permit shall be referred to the Water Resources Director for [such] further proceedings [as are not inconsistent
24 therewith] consistent with the order.

25 *SECTION 20. ORS 543.225 is amended to read:

26 *543.225. (1) The Water Resources Director shall refer any application or amended application for a
27 preliminary permit or for a license for a major project of more than 100 theoretical horsepower to hearing, and
28 shall also refer to hearing, an application for preliminary permit or license for a minor project of less than 100
29 theoretical horsepower if the board concludes it is in the public interest to do so.

30 *(2) The board shall hold a public hearing on an application referred under subsection (1) of this section, on
31 proper notice to the applicant and to each protestant, if any. If, after the hearing, the board determines that the
32 proposed project does not comply with the standards set forth in section 3 of this 1985 Act or rules adopted by the
33 board under section 3 of this 1985 Act, or would otherwise impair or be detrimental to the public interest so far as
34 the coordinated, integrated state water resources policy is concerned, it shall enter an order rejecting the
35 application or requiring its modification to conform to such public interest, to the end that the highest public
36 benefit may result from the proposed project. The order may set forth any or all of the provisions or restrictions
37 to be included in a preliminary permit or license concerning the use, control and management of the water to be

1 appropriated for the project, including, but not limited to, a specification of reservoir operation and minimum
2 releases to protect the public interest.

3 "(3) In determining whether the proposed project would impair or be detrimental to *[such]* the public
4 interest, the board shall have due regard for:

5 "(a) Conserving the highest use of the water for all purposes, including irrigation, domestic use, municipal
6 water supply, power development, public recreation, protection of commercial and game fishing and wildlife, fire
7 protection, mining, industrial purposes, navigation, scenic attraction or any other beneficial use to which the
8 water may be applied for which it may have a special value to the public.

9 "(b) The maximum economic development of the waters involved.

10 "(c) The control of the waters of this state for all beneficial purposes, including drainage, sanitation and flood
11 control.

12 "(d) The amount of waters available for appropriation for beneficial use.

13 "(e) The prevention of wasteful, uneconomic, impracticable or unreasonable use of the waters involved.

14 "(f) All vested and inchoate rights to the waters of this state or to the use thereof, and the means necessary to
15 protect such rights.

16 "(g) The state water resources policy formulated under ORS 536.300 to 536.350 and 537.505 to 537.525.

17 "(4) After the entry of the order specified in subsection (2) of this section, the application for a preliminary
18 permit or for a license shall be referred to the Water Resources Director for such further proceedings as are not
19 inconsistent therewith.

20 "**SECTION 21.** Section 22 of this Act is added to and made a part of ORS 537.140 to 537.230.

21 "**SECTION 22.** (1) Whenever an application is made for a permit to appropriate water for hydroelectric
22 purposes, the board shall give written notice of the filing of the application to the owner of any land that is:

23 "(a) Adjacent to any portion of the stream in which the quantity of water will be decreased by the project; or

24 "(b) Adjacent to the site of the proposed hydroelectric project.

25 "(2) The board shall also publish notice of the application once each week for at least four successive weeks
26 and for such further time, if any, as the board shall determine, in a newspaper of general circulation in each
27 county in which the project covered by the application is located.

28 "**SECTION 23.** ORS 543.220 is amended to read:

29 "543.220. (1) Whenever an application is made for a preliminary permit and after said application has been
30 referred to hearing, the board shall give written notice of the filing of the application to:

31 "(a) Any municipality or other person or corporation which, in the judgment of the board, is likely to be
32 interested in or affected *[thereby,]* by the proposed project; and

33 "(b) The owner of any land that is:

34 "(A) Adjacent to any portion of the stream in which the quantity of water will be decreased by the project; or

35 "(B) Adjacent to the site of the proposed project.

36 "(2) The board shall also publish notice of the application once each week for at least four successive weeks
37 and for such further time, if any, as the board shall determine, in a newspaper of general circulation in each
38 county in which the project covered by the application is located.

1 " [(2)] (3) No application for the appropriation or use of water for the development of 1,000 theoretical
2 horsepower or more shall be granted until at least six months after the application for a preliminary permit has
3 been filed.

4 "SECTION 24. ORS 543.135 is amended to read:

5 "543.135. (1) In any case where a hydroelectric project has been licensed by the Federal Power Commission,
6 as of March 16, 1961, and said project has been constructed and is in operation without license under ORS
7 543.010 to 543.620, 543.705 to 543.830 and 543.990, or when such a federally licensed project comprises more
8 than one hydroelectric plant, as soon as each hydroelectric plant in said license has been constructed and is in
9 operation, the Water Resources Director may, upon application made therefor as provided in ORS 543.010 to
10 543.620, 543.705 to 543.830 and 543.990 and without public hearing, grant a license for such project, waiving and
11 modifying such of the terms, conditions and requirements of ORS 543.010 to 543.620, as the Water Resources
12 Director, by order, after full investigation, finds to be in conflict with the license issued by the Federal Power
13 Commission, except the period for which license may be issued and the annual charge as determined by the
14 Water Resources Director under ORS 543.300 (5). An application for license under this section shall not be
15 subject to referral to the Water Policy Review Board under provisions of ORS 543.225 and shall not be subject to
16 the provisions of ORS 543.220 [(2)] (3).

17 "(2) Nothing in this section is to be construed to authorize any person, firm or corporation to begin or
18 construct any water power project before obtaining a license for such project.

19 "SECTION 25. The landowner notification requirements under ORS 543.220 and section 22 of this Act
20 shall apply to any application for a permit to appropriate water for hydroelectric purposes under ORS 537.140 to
21 537.230 or for a preliminary permit under ORS 543.220 for which a hearing has not yet been held before the
22 Water Policy Review Board, or, if for less than 100 theoretical horsepower, has not yet been acted upon by the
23 Water Resources Director on or before the effective date of this Act.

24 "SECTION 26. This Act shall apply to any of the following applications for which the hearing record has not
25 been closed on or before the effective date of this Act:

26 "(1) An application for a permit to appropriate water for hydroelectric purposes under ORS 537.140 to
27 537.211.

28 "(2) An application for a preliminary permit or license for a hydroelectric power project under ORS 543.010
29 to 543.620.

30 "(3) An application for a site certificate for a hydroelectric power project under ORS 469.300 to 469.570.

31 "SECTION 27. Nothing in this Act applies to any hydroelectric project in excess of 25 megawatts for which
32 funding has been approved by the governing body of a city on or before May 15, 1985.

33 "SECTION 28. This Act takes effect on October 1, 1985."

ATTACHMENT 3

1ST CASE of Level 1 printed in FULL format.

Office of the Attorney General of the State of Oregon

No. OP-5796

Slip Opinion

March 26, 1985

REQUESTBY: Bill Dixon, Administrator
Siting and Regulation Division
Department of Energy
102 Labor and Industries Building
Salem, Oregon 97310

OPINION: You ask whether the Department of Environmental Quality (DEQ) is bound by the terms of an Energy Facility Siting Council (EFSC) certificate when considering whether to certify compliance with water quality standards under section 401 of the Clean Water Act. n1 (33 USC § 1341). In our opinion, DEQ and the Environmental Quality Commission (EQC) n2 are bound provided either that EFSC's findings show that the facility will comply with the federally approved water quality standard administered by DEQ or that the site certificate requires such compliance.

n1 Pub L 92-500 as amended, 33 USC 1251 et seq.

n2 The Environmental Quality Commission is the policy body under which DEQ operates. ORS 468.010-468.035. In this opinion reference to DEQ should be understood to include reference to the EQC.

The question you ask arises in the context of EFSC's review under ORS 469.300 to 469.410 of an application for a site certificate for a hydroelectric facility in excess of 25,000 kilowatts. Under the statutory scheme EFSC reviews the application for certification against criteria established in EFSC's statutes and administrative rules and issues or denies a site certificate. See OAR 345-78-010 to 345-78-048. As a general rule, EFSC's issuance of a site certificate does have a binding effect on other state agencies. As stated in ORS 469.400(5) :

"(5) Subject to the conditions set forth therein, any certificate signed by the chairman of the council shall bind the state and all counties and cities and political subdivisions in this state as to the approval of the site and the construction and operation of the proposed energy facility. Affected state agencies, counties, cities and political subdivisions shall issue the appropriate permits, licenses and certificates necessary to construction and operation of the facility, subject only to condition of the site certificate. Each state or local governmental agency that issues a permit, license or certificate shall continue to exercise enforcement authority over such permit, license or certificate."

The scope of the binding effect on other state agencies of an EFSC site certificate has been considered in several earlier opinions. 41 Op Atty Gen 305 (1980); 38 Op Atty Gen 2185 (1978); 37 Op Atty Gen 103 (1974). Generally these opinions have held that where an agency is given discretion to issue a permit, license or certificate relating to a project for which a site certificate has been issued, that discretion is preempted by EFSC and such action must be

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taken in conformity with the site certificate.

In 37 Op Atty Gen 103, 113, (1974), it was stated:

" . . . [O]nce the holder of an executed site certificate presents a properly completed application, complying with pertinent statutes, rules and regulations and accompanied by any required fees, to an affected state or local agency, any permit, certificate or license that is necessary to the construction or operation of the facility must issue."

An analogous question was addressed in 41 Op Atty Gen 305 (1980). This office was asked whether the state building code applied to hydroelectric plants certified by the EFSC. In that opinion it was concluded that once a site certificate is issued the state building code permit must also be issued, but that the certificate is required

" . . . to contain a condition that the certificate holder comply with state laws, which would include the building code statutes and the codes themselves, subject of course to any other specific condition . . . imposing requirements varying from the code." Id. at 308. n3

Thus, the requirement that a building code permit be issued once a site certificate is granted would not engender any potential conflict with state building code statutes or rules unless the EFSC certificate contained specific provisions at variance with some of these statutes or rules.

n3 This discussion reflects the content of ORS 469.400(3), which requires that a site certificate "require both parties to abide by state law . . . in effect on the date the site certificate is executed." We do not address in this opinion the manner in which ORS 469.400(3) requires EFSC to incorporate explicit statutory and administrative standards of other agencies as conditions in the site certificate, or the degree to which EFSC can override nondiscretionary standards in its site certification process.

Although we concur with the general conclusion in the earlier opinions that issuance of a site certificate is binding on other state agencies as to their discretionary decisions, DEG's role in issuing a water quality certification under section 401 of the Clean Water Act presents a more complex question. Section 401 of the Clean Water Act provides in pertinent part:

"(a)(1) Any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State . . . that any such discharge will comply with the applicable provisions of sections 1311, 1312, 1313, 1316, and 1317 of this title." 33 USC § 1341(a)(1). n4

The issuance of a hydroelectric license by the Federal Energy Regulatory Commission (FERC) is an activity requiring prior state water quality certification.

n4 33 USC § 1341(d) provides:

"Any certification provided under this section shall set forth any . . . limitations, and monitoring requirements necessary to assure . . .

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[compliance] with any applicable effluent limitations and other limitations, under section 1311 or 1312 of this title . . . and with any other appropriate requirement of State law set forth in such certification and shall become a condition on any Federal license or permit subject to the provisions of this section."

Nothing in this opinion addresses the breadth of the state's authority to include requirements beyond the cited water quality standards; this opinion deals only with the apparent minimal requirement not to fall below federally approved water quality standards.

The EQC has been designated by Oregon law as the agency empowered to implement federal water pollution programs, and hence has the responsibility to provide the state certification under section 401 of the Clean Water Act. ORS 468.730. It could be argued that this specific grant overrides the more general provisions of ORS 469.400(5). However, in view of legislative history, n5 we do not find that ORS 468.730 categorically overrides the provisions of ORS 469.400(5). Therefore, we examine DEQ's responsibilities under the federal program, as well as EFSC's statutes, to determine their respective roles in this matter.

n5 The same legislative body which adopted ORS 468.730 in 1973 also made a number of changes in environmental quality statutes. One such change revised ORS 449.070, which in its earlier form made water pollution control statutes paramount over any other provision of state law. ORS 449.070 was amended and recodified as ORS 468.705, to provide that EQC's water pollution control authority is controlling except as provided in pertinent energy siting statutes. Or Laws 1973, ch 835.

The pertinent energy siting statutes in 1973 were those relating to EFSC's predecessor agency Nuclear and Thermal Energy Council (NTEC). EFSC, created in 1975, inherited NTEC's responsibilities and received additional authority over siting of certain hydroelectric facilities. Or Laws 1975, ch 606. The "preemption" provisions of ORS 469.400 are essentially identical to those of the NTEC site certification statute from which it was derived (ORS 453.395). Thus, DEQ's overall water pollution control authority was apparently made subject to whatever "preemption" effects the site certification statute invokes.

In accordance with the provisions of the Clean Water Act, DEQ has adopted water quality standards which have been reviewed and approved by the Environmental Protection Agency (EPA) pursuant to 33 USC § 1313. n6 OAR ch 340, div 41. EPA's rules provide that the state adopted water quality standards must fulfill fairly comprehensive and demanding requirements. 40 CFR § 131.5 (1984). n7 Once approved by EPA, the standards become federal-state standards. S Rep No 92-414, 92nd Congress, 2d Sess, reprinted in 1972 US Code Cong & Ad News 3668, 3676.

n6 See letters of approval on:

August 30, 1973, to Governor McCall from James L. Agee, Regional Administrator, Region X, EPA.

July 18, 1977, to Governor Straub from Donald P. Dubois, Regional Administrator, Region X, EPA.

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May 16, 1980, to Governor Atiyeh from Donald P. Dubois, Regional Administrator, Region X, EPA.

n7 For example, the EPA rules require that the state's submission must include the following elements:

"(a) Use designation consistent with the provisions of sections 101(a)(2) and 303(c)(2) of the the Act.

"(b) Methods used and analyses conducted to support water quality standards revisions.

"(c) Water quality criteria sufficient to protect the designated uses.

"(d) An antidegradation policy consistent with § 131.12." 40 CFR § 131.6 (1984).

The question before us is whether the provisions of ORS 469.400(5) require that, once a site certificate is issued by EFSC, DEQ must issue a water quality certification even in a case where the proposed activity does not meet those federally approved water quality standards. We agree, as concluded in our earlier opinions, that once the site certificate is issued other state agencies with authority under state law related to the project do lose their discretion, and must issue appropriate permits, licenses or certifications. Although we have concluded that DEQ's authority to review water quality matters under ORS 468.730 is not independent of the requirements of the EFSC site certificate process, we also believe it is clear that EFSC cannot require EQC to issue a water quality certification (or itself approve a water quality certification) if that decision would be inconsistent with federal law administered by DEQ.

Under the Clean Water Act, state certification means that the proposed activity meets applicable provisions of 33 USC §§ 1311, 1312, 1313, 1316 and 1317. The applicable provisions of sections 1311 to 1313 are represented by the federally approved DEQ standards. The fact that an EFSC site certificate preempts discretionary state agency permitting activities does not relieve the state of the obligation to make a decision on a section 401 water quality certificate in conformance with these federally approved standards. n8

n8 We recognize that DEQ may avoid conflict with federal law if it waives the 401 certification requirement by failing to act on a request within one year. 33 USC § 1341(a)(1). However, construing the DEQ and EFSC statutes together, we see no evidence of legislative intent that Oregon purposefully waive its authority over proposed federal actions, and this discussion assumes no such intent.

As a general principle, in the case of direct conflicts between state and federal law, the requirements of federal law will prevail. US Const Art VI, C1 2; Florida Avocado Growers v. Paul, 373 US 132, 142-143 (1963). The provisions of the Clean Water Act specifically provide that a state may not use standards less stringent than the federal standards in carrying out its responsibilities under the Clean Water Act. A state may not:

". . . adopt or enforce any effluent limitation, or other limitation, effluent standard, prohibition, pretreatment standard, or standard of performance which is less stringent than the effluent limitation, or other

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limitation, effluent standard, prohibition, pretreatment standard, or standard of performance under this chapter; . . ." 33 USC § 1370 (1972).

In a case not involving section 401 certification but rather issuance of a National Pollutant Discharge Elimination System (NPDES) permit, the Michigan Court of Appeals addressed the necessity of a state's compliance with the standards of the Clean Water Act. As stated by the court:

" . . . Where Federally approved programs are adopted, the adopting state may issue the discharge permit. 33 U.S.C. § 1342(a). However, the state program must comply with the Federal regulations establishing effluent limitations. . . . Although states may establish their own limitations, none may be less stringent than the Federal limitations. 33 U.S.C. § 1370. To the extent they so conflict, they are preempted by the Federal regulations under the supremacy clause of the United States Constitution." *Dwyer v. City of Ann Arbor*, 79 Mich App 113, 261 NW2d, 231 at 236 (1977). (Citations omitted.)

In a recent case involving section 401 certification of a hydroelectric project, the New York Court of Appeals has held that to require the state's section 401 decision-maker to consider countervailing energy needs and environmental interests

" . . . with the possibility of issuance of section 401 certification despite noncompliance with water quality standards on the basis of overriding energy needs would be to countenance . . . failure by the commissioner to perform the function reserved to him under FWPCA. . . ." *Power Authority of State v. Williams*, 60 NY2d 315, 457 NE2d 726, 730 (1983). (Emphasis added.)

Considering all of these points, we conclude that the State of Oregon may not issue a 401 water quality certification for a project which does not meet the federally approved standards.

We believe that there are a number of options whereby EFSC's issuance of a site certificate could require DEQ to issue a 401 certification and yet assure compliance with the applicable provisions of the Clean Water Act. First, EFSC could determine not to issue a site certificate for any project which does not fully comply with DEQ's federally approved standards. In consultation with DEQ, EFSC could assess whether the proposed project will comply; if it does, there is no conflict and a site certificate could issue. If a conflict is identified then DEQ and EFSC could utilize a process such as that set out in a previously adopted Memorandum of Understanding which provides:

"Prior to adopting each siting, construction and operation standard and site certificate condition on and subject of mutual concern EFSC and DOE shall consider its impact on EQC and DEQ relationships with EPA. In no event shall EFSC or DOE adopt any standard or condition which would violate federal or state environmental law. Should it come to the attention of EFSC or DOE that such standard or condition could have such effect, EFSC or DOE shall amend such standard or condition as soon as possible to eliminate the cause. EFSC shall provide a reopener clause in each site certificate to allow such an amendment." Memorandum of Understanding Between the Energy Facility Siting Council, Department of Energy, Environmental Quality Commission and Department of Environmental Quality, September 8, 1981, pp 3-4.

Thus, if a potential conflict was identified EFSC could adopt the necessary

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standard as one of its criteria for a decision on the application, thereby assuring that no site certificate would be approved for a project unless it complied with the federally approved standards. See *Marbet v. Portland Gen. Elect.*, 277 Or 447, 463, 561 P2d 154 (1977).

Second, EFSC could include a condition in the site certificate that requires the applicant to obtain a 401 certification from DEQ.

A third option would be for EFSC to adopt DEQ's existing federally approved water quality standards as the administrative rules which establish standards for EFSC site certificate decisions. EFSC could then make a determination whether the project meets federally approved standards for a water quality certification as a part of its decision-making process on the site certificate. Any project gaining a site certificate would comply with the federally approved standards, and a 401 water quality certification could issue without conflict.

It is important to note that should EFSC choose this approach, it must adopt the existing DEQ standards exactly as approved by EPA.

In summary, it is our general conclusion that DEQ is bound by EFSC's decision to issue a site certificate to the same extent as are other agencies, except that DEQ may not be required to issue a water quality certification if the project does not fully comply with federally approved water quality standards. As noted, EFSC and DEQ have addressed the question of compliance with federal standards in their September 8, 1981 Memorandum of Understanding.

OPINIONBY: Larry D. Thomson, Acting Chief Counsel, General Counsel Division

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

PETITION FOR RULEMAKING

Date Prepared: 2/10/86

Comments Due: 3/3/86

**WHO ARE THE
PETITIONERS:**

Pursuant to Oregon Administrative Rules (OAR) 340-11-047, the City of Klamath Falls has petitioned the Environmental Quality Commission to amend Oregon Administrative Rules (OAR) 340 Division 48.

**WHAT IS
REQUESTED:**

The petitioners have requested that those facilities exempted from the requirements of Chapter 569, Oregon Laws 1985, Section 27, be also exempted from some of the requirements of OAR 340 Division 48.

The exempted facility would be: "... any hydroelectric project in excess of 25 megawatts for which funding has been approved by the governing body of a city or before May 15, 1985."

The portions of the rules for which the exemption is requested are OAR 340-48-025(2)(f)(C)and(D), OAR 340-48-025(2)(g), and OAR 340-48-020(7)(i). These portions of the rules require that a facility meet the applicable requirements of the Water Resources Commission, the Energy Facility Siting Council, and appropriate requirements of other state and local agencies as a condition of certification by the Department. The petitioner contends that the requirements of other agencies should not be imposed as a condition of the Water Quality certification.

**HOW IS THE
PUBLIC AFFECTED:**

The petitioner is requesting a modification of the rules which regulate what the Department must consider in making a Water Quality Certification under Section 401 of the Federal Clean Water Act.

HOW TO COMMENT:

Anyone who desires to comment, either for or against the petitioners request, should submit written comments to the Department of Environmental Quality, Water Quality Division, P. O. Box 1760, Portland, OR 97207. Comments should be received by March 3, 1986.

**WHAT IS THE
NEXT STEP:**

The Environmental Quality Commission will take action on the petition at their regular meeting on March 14, 1986, to be held in Portland. Their action will be to either deny the petition or to initiate rule making in accordance with applicable procedures.

The Commission meeting will be held in room 1400 of the Yeon Building, 522 S.W. 5th Avenue.

WC176



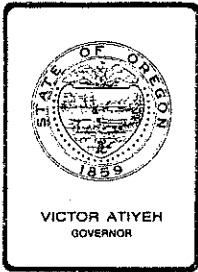
P.O. Box 1760
Portland, OR 97207

8/16/84

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.

DOA 22
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Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission
From: Director
Subject: Agenda Item J, March 14, 1986, EQC Meeting

Informational Report

Development of Landfill Site - Selection Criteria

Background

This report has been prepared at the Director's initiative in order to:

- (1) Inform the Environmental Quality Commission (EQC) of the status of the Department's program to develop site selection criteria for its Portland metropolitan area landfill siting project, and
- (2) To focus the Commission's attention on the group of criteria (pass-fail criteria) that will be applied during the first stage of the site selection process.

The 1985 Legislature, through passage of Senate Bill 662, gave the Department the responsibility and authority to site a solid waste disposal facility to serve the Portland metropolitan area (Senate Bill 662 is published as a note at the end of Oregon Revised Statutes (ORS) 459). The siting of a sanitary landfill is only one part of that legislation which also requires the development and implementation of an aggressive and comprehensive waste reduction program for the Portland region. The timely siting of a landfill is seen as critical since the Portland area's principal existing landfill (St. Johns) is presently expected to be completely full by 1989; and the region's designated solid waste authority (Metropolitan Service District) has been unable to site a suitable replacement facility.

In response to the 662 legislation the Department has begun a process that will lead to the selection by the Environmental Quality Commission of an environmentally acceptable landfill site by July 1 of 1987. The time frame for this process calls for the development of a comprehensive list of potential sites by May, 1986, the completion and submission to the EQC of a

study identifying 12 to 18 preferred and appropriate sites by June, 1986, and the recommendation by the site selection consultant of two to four finalist sites by October 1, 1986. Each finalist site will receive a detailed feasibility analysis, including comprehensive technical analysis, field and laboratory testing, preliminary design and site planning, on- and off-site mitigation planning, and cost analysis.

This work will culminate in a DEQ recommendation to the EQC for a specific site (or sites) by May of 1987, and the issuance by the EQC of an order to establish a site or sites by July 1, 1987. In considering the DEQ recommendation and in issuing the siting order the Commission will first need to compare the two to four finalist sites using the DEQ site-selection criteria. Secondly, the Commission must find that the site or sites they select meet the minimum site suitability requirements outlined in Section 4 of Senate Bill 662.

Criteria Development

The first major step in the site selection process is the development of site selection criteria. This is an especially critical step since the criteria report will be the guiding document throughout the site selection process. The Department requested proposals from qualified consultants to assist in the development of the criteria. Seven proposals were received and reviewed by Department staff, and the top four candidates were interviewed. Based on information obtained through this process the Department selected the Brown and Caldwell consulting team. The team includes Brown and Caldwell as the primary contractor and their subcontractors Converse Consultants, and H. G. Schlicker and Associates.

The Department has directed Brown and Caldwell to develop criteria that are comprehensive, technically defensible, and that will ensure an impartial, fresh look at all potential landfill sites. The Department has also established a citizens advisory committee (Facility Siting Advisory Committee - FSAC) that will provide advice and direction to Department staff during the criteria development process and throughout the siting project (See Attachment A).

After reviewing numerous other examples of site selection criteria that had been developed and used by communities throughout the Pacific Northwest and other areas of the country the Brown and Caldwell team selected a format that include three major categories and five subcategories of criteria. The three major categories are:

Pass-Fail Criteria. A landfill site or sites must be selected from somewhere within a six-county region (Washington, Multnomah, Clackamas, Marion, Yamhill Counties) that includes an area of several thousand square miles. To bring potential sites into focus, certain constraints on where a site can be located must be identified. Obviously incompatible areas must be eliminated-- this is the purpose of the pass-fail criteria. If an area passes

an individual pass-fail criterion, it may be suitable for consideration as a landfill. If an area fails the criterion, it is automatically eliminated from further consideration. An example of a pass-fail criterion is the regulatory requirement to keep landfills at least 10,000 feet from airport runways used by turbojet aircraft. All areas within 10,000 feet of these runways will be eliminated from consideration.

Although the principal use of the pass-fail criteria will be in the initial identification of potential sites, the criteria will remain in force as the process continues. Information about sites will surface throughout the site selection process; and if new information indicates the site fails one of these criteria, the site will be eliminated.

Site Evaluation Criteria. When the initial process of identifying potential sites is complete there may be more than a hundred sites identified. The initial list of sites must be screened down so that only the most suitable sites are given further consideration. The site evaluation criteria have been developed for this purpose.

These criteria will be used to compare the alternative sites and to identify those that are most suitable. Information used for this process will be obtained from pertinent literature, unpublished reports and file data, aerial photographs, maps, public input, surface reconnaissance and, in the later stages of the process from limited on-site investigations. Initially the list of potential sites will be reduced to the top 12 to 18 candidates. Limited field investigations will then be conducted on those 12 to 18, and the site evaluation criteria will be reapplied in order to identify the two to four most suitable sites.

Final Decision Criteria. The final 2 to 4 sites will undergo detailed site-specific investigations. These investigations will develop data which will be used in conjunction with the final decision criteria to refine the comparison of the sites, and to select the best site from among the final lists. The final decision criteria will include many of the original site evaluation criteria. They will also include some site evaluation criteria expanded to reflect the greater amount of data available, and some new criteria developed to accommodate previously unavailable site specific information. Several of the final decision criteria will directly address the issue of site suitability in relation to the mitigation of potential conflicts with surrounding land uses as identified in Senate Bill 662.

Each of the three major categories is divided into the same five subcategories: political, regulatory, environmental, technical, and economic. The purpose of these subcategories is to provide a method to help guide the site selection process. They help direct the project team to evaluate potential sites from all possible perspectives. For some subcategories, there may not be any criteria

under a given major category. For example, there are no economic criteria in the pass-fail category. The following paragraphs discuss each of the five subcategories:

Political. Political criteria include factors related to political boundaries and jurisdictions. Senate Bill 662, which gives the Environmental Quality Commission authority to site a landfill for the Portland Metropolitan Area, is also considered under this category.

Regulatory. This category addresses all laws, regulations, or regulatory agency actions which impact landfill site selection. Some of the most significant laws in addition to Senate Bill 662 include the Resource Conservation and Recovery Act (RCRA), Oregon Revised Statutes (ORS) 459, and Oregon Administrative Rules (OAR) 340-61.

Environmental. It is essential that a landfill site be found which has the best natural characteristics for protecting the environment. These natural characteristics back up and support the landfill's built-in environmental protection features.

This sub-category is divided into various environmental elements: surface water, groundwater, natural habitat, land resources, air quality, social and cultural resources, and aesthetic environment.

Technical. The technical category addresses characteristics of the site which relate more to site design and operation than strictly to protection of the environment. Examples of technical criteria are site capacity and constructability of site soils.

Economic. The cost of the landfill is an important criterion. However, detailed costs of individual sites will not be known until the final stages of site selection. Economic criteria established for earlier stages in the process relate more generally to factors which influence cost, such as distance of the site from the solid waste source. As the site selection process progresses, many technical criteria will become purely economic concerns. Mitigation measures to protect against environmental impacts will also influence cost.

The Brown and Caldwell team, which included a number of experts with a broad range of landfill related technical expertise, worked in conjunction with DEQ Staff to develop a list of 12 pass-fail, 38 evaluation, 32 final decision criteria, and a numerical rating system to be used with the evaluation and final decision criteria. The draft criteria and rating system were submitted to the Department in draft form on February 3, 1986.

Public Review

The Department has employed a number of techniques in order to obtain public comment on the draft criteria report. A complete copy of the report was provided to each member of the FSAC as well as to a core group of technical specialists and involved citizens. An executive summary of the report, along with a public hearing notice and a list of locations where complete copies of the report could be obtained or reviewed, was mailed to over 800 groups and individuals directly or indirectly involved in solid waste related issues. (See Attachment B). In addition, the criteria development processes was discussed and copies of the draft report were circulated at numerous meetings between Department staff and local

government officials, recycling and environmental support groups, garbage haulers, and citizen action groups. A notice informing the public of the availability of the draft criteria and outlining the comment schedule was published in the Oregonian on February 13, 1986. A public hearing on the draft criteria was conducted on February 20, and written comments were accepted until February 25th.

Twenty-two individuals or groups provided written comments and eleven individuals presented testimony at the public hearing concerning the draft criteria. The comments varied considerably in their level of detail and the number of criteria that were addressed. Certain general points, however, were made repeatedly. These points were:

- (1) There was general support for the format, methodology, and comprehensive nature of the draft criteria.
- (2) A need was indicated for additional information on the criteria development process and the qualifications of the Brown and Caldwell team.
- (3) The need for clarity and consistency in the technical terms, and definitions used in the report was emphasized.
- (4) More time to adequately review the criteria was requested. Most commenters felt that they had adequate opportunity to review the 12 pass/fail criteria, but not to cover the evaluation and final decision criteria in detail.

Review by Facility Siting Advisory Committee (FSAC)

The FSAC reviewed and commented on the criteria development process at their February 12th meeting. The Committee agreed that additional information on the criteria development process and the Brown and Caldwell team qualifications should be added to the report. They also concurred that additional time to review the criteria would be very valuable.

At the February 25th meeting the Committee concentrated on the pass-fail criteria. The Committee discussed several of the criteria in detail, and, although no specific objections to any of the criteria were raised, the Committee's constructive comments led to several revisions that are detailed in the next section of this report.

Response to Comments on the Draft Criteria

Text Modifications: In response to comments from the general public and the FSAC, Brown and Caldwell has expanded the discussion of the criteria development process and improved the clarity and consistency of the technical terminology in the text of the report. In addition, they have added an appendix that describes the qualifications of their criteria development team.

Pass-Fail Criteria Modifications: The original draft criteria report included 12 pass-fail criteria. In response to public comment several of the pass-fail criteria were modified, and two were eliminated. The ten revised pass-fail criteria are listed below, and some of the major modifications that occurred and the reasons for those modifications are described in the following pages.

Revised Pass-Fail Criteria

- Pass-Fail No. 1 - Political Boundaries - Landfill sites are to be located within the Oregon counties of Multnomah, Washington, Clackamas, Yamhill, Marion, or Columbia.
- Pass-Fail No. 2 - Proximity to Airports - The active landfill will be located outside a specified distance from airport runways as defined by RCRA.
- Pass-Fail No. 3 - Sole Source Aquifer - Landfill will not be sited over the recharge zone of an aquifer which has been declared sole source by the United States Environmental Protection Agency as of January, 1986.
- Pass-Fail No. 4 - Floodway - The active landfill will not be located in a floodway.
- Pass-Fail No. 5 - Active Faults - Landfill environmental protection facilities will not be sited over the trace of an active geologic fault.
- Pass-Fail No. 6 - Threatened and Endangered Species - The active landfill will not be placed in an area which is a critical habitat for listed threatened or endangered species, either fish, wildlife, or plants.
- Pass-Fail No. 7 - Compatible Land Use - Areas with current land uses that are clearly incompatible with landfill operations will be eliminated from consideration.

- Pass-Fail No. 8 - Historic and Archaeological Preservation - The active landfill will not be located within 1,000 feet of any site recognized on the National or State Register as of January, 1986.
- Pass-Fail No. 9 - Slope - Active landfill area will be provided having a slope of less than 25 percent.
- Pass-Fail No. 10 - Site Capacity - A site or combination of sites will be selected with at least a 15 year capacity.

Discussion of Pass-Fail Criteria Modifications

Original Pass-Fail No. 1 - Eminent Domain Right of State:

This criterion excluded those areas from consideration where the state does not have the right of eminent domain i.e., the right to condemn and purchase property for the public good. This would have excluded all federally owned land from the site selection process.

This criterion has been eliminated as a pass-fail criterion. This decision was made primarily on the basis of comments by the FSAC that it was too restrictive, and would possibly eliminate potentially suitable sites. The initial intent of the criterion was to drop from consideration those sites that could not be acquired by the state in the limited time available for completing the siting process. The intent of the original criterion has now been achieved by the inclusion of wording in the text (Page 11) that indicates that no site will be given final consideration unless timely acquisition is possible.

Original Pass-Fail No. 2

Revised Pass-Fail No. 1 - Political Boundaries:

Senate Bill 662 requires that any site to be considered be located in the Oregon counties of Multnomah, Washington, Clackamas, Columbia, Marion, or Yamhill.

A few FSAC members felt that it would be best to not consider sites in Yamhill, Marion, and Columbia Counties since the need to obtain land use approval in those counties would prohibit completing the siting process in the time allowed. The criterion was left in since it reflects the intent of SB 662, but the need for having land use approval before giving a site in those three counties final consideration is discussed in the text (Page 11).

Original Pass-Fail No. 4

Revised Pass-Fail No. 3 - Sole Source Aquifers:

An aquifer can be designated as sole source by the Environmental Protection Agency (EPA) if it provides 50 percent or more of an areas drinking water.

The wording of this criterion was changed to make it clear that only the recharge zones (land areas where surface water percolates downward to the water table and enters a groundwater flow system) of aquifers that had been designated as sole source as of January 1986 would be excluded from consideration. This criterion was included because federal solid waste management standards (Resource Conservation and Recovery Act - RCRA) initially proposed excluding sole source aquifer recharge zones as possible landfill sites. Current RCRA rules, however, do not specifically exclude these areas from consideration.

Original Pass-Fail No. 5
Revised Pass-Fail No. 4 - Floodway:

This criterion states that the active landfill will not be located in a floodway (the area of heavy current through which most of a river or stream's flood waters pass).

A few comments were received that this criterion should exclude all areas within a designated 100 year flood plain (a much larger area than is included in floodways). The floodway definition was maintained however since it was felt that a flood plain definition would be too restrictive, and would go against the Department's policy of initially developing as comprehensive a list as possible of potentially suitable sites. Language was included in the criterion discussion that states that U. S. Corps of Engineers maps will be used to define lands located in floodways.

Original Pass-Fail No. 8
Revised Pass-Fail No. 7 - Land Use:

Certain land uses are incompatible as possible landfill sites, and this criterion was developed to exclude those land uses from consideration. In response to comments from the public, the FSAC, and Department staff the list of incompatible land uses was expanded to include the Willamette Greenway, approved federal and state wild and scenic rivers, and national parks or recreation areas. Several land use descriptions were made more clear or definitive, and cemeteries were removed from the list. Suggestions to include churches, schools, and hospitals were considered, but these land uses were not added to the list. This decision was made on the basis that the definition of these terms was subject to broad interpretation, and that their inclusion might make the criterion more restrictive than intended and result in the exclusion of potentially suitable sites.

Original Pass-Fail No. 10 - Buffer Area:

The buffer area is that area of land that separates the active landfill from the nearest residential area. This criterion was eliminated as a pass-fail criterion on the basis that it was more appropriate to deal with the amount of buffer area in the evaluation criteria. The original pass-

fail buffer condition described in the criterion (fewer than 5 existing dwellings within 1,000 feet of the active landfill) was added to the evaluation criterion dealing with buffer area, and assigned a minimum (1 out of 10) rating.

Original Pass-Fail No. 11

Revised Pass-Fail No. 10 - Slope

The slope of a landfill site is an important factor in evaluating the workability or operational suitability of that site. There was some concern expressed by the public and the FSAC that the intent of this criterion was not clear, and that the method by which site slope would be evaluated was not adequately defined. The wording on this criterion statement was not changed, but the discussion was expanded to better define the intent of the criterion and to describe the methods that will be used to evaluate slope during different stages of the site selection process.

Original Pass-Fail No. 12

Revised Pass-Fail No. 10 - Capacity:

Site capacity is a measure of a sites potential life. The Department has determined that the site or sites selected should have a total capacity to meet the Portland metropolitan area's landfill needs for at least 15 years. Based on this desired capacity a minimum site size (including the area of active landfill and the buffer area) of 200 acres was proposed in the original criteria. In the revised criteria the minimum site size is defined as 300 acres. In selecting this minimum size, consideration has been given to waste load reduction from the possibility of multiple sites, and the need to not exclude small but environmentally sound sites. Several comments from technical experts suggested that the minimum site size should be considerably greater, but the smaller size was selected in order to ensure that size alone would not exclude an otherwise potentially suitable site.

Evaluation and Final Decision Criteria Modifications: In response to requests from the public, the Director has extended the period of public comment on the evaluation and final decision criteria until March 31, 1986, and has directed Department staff to continue to aggressively solicit public comment. Staff plans for generating additional comments include a mass mailing of notification of the extended comment period, an additional public hearing on March 27, and continued staff contact and cooperation with interested individuals and groups. If possible, public workshops involving recognized experts in fields covered by the criteria will be conducted.

Director's Recommendation:

It is recommended that the Commission review only the revised pass-fail criteria at its March 14 meeting, and that it concur in the following course of action to be pursued by the Department:

- (1) The finalized pass-fail criteria will be provided to the site selection consultant, and will be used in the site identification process (development of the initial list of potential sites).
- (2) The Department will continue to solicit public comment on the evaluation and final decision criteria. A public hearing will be held on March 27th, and written comments will be accepted until March 31.
- (3) The revised evaluation and final decision criteria will be submitted to and reviewed by the EQC before those criteria are used for the evaluation of specific sites. Actual site evaluation is scheduled to begin on or about May 1, 1986.



Fred Hansen

Attachments A - Facility Siting Advisory Committee
Membership Roster

B - "A Chance to Comment" Notice for the
Draft Criteria Review Process

C - "Landfill Siting Criteria" - Second Draft;
Brown and Caldwell, February 1986

Steve Greenwood;m
229-5782
March 10, 1986
SM136



Department of Environmental Quality

522 S.W. FIFTH AVENUE, BOX 1760, PORTLAND, OREGON 97207 PHONE: (503) 229-5696

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January 1986

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FY2253

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

LANDFILL SITE SELECTION CRITERIA FOR THE PORTLAND METROPOLITAN AREA

**WHO IS
AFFECTED:**

Residents, property owners, businesses and industry in the Portland Metropolitan Area.

BACKGROUND

By authority of the Oregon Legislature (SB 662), the Environmental Quality Commission has been given until July 1, 1987, to site a new landfill site for the Portland Metropolitan Area.

DEQ's first step in the site selection process is development of siting criteria to identify and evaluate potential landfill sites. Draft Landfill Siting Criteria have been developed and are available for public review and comment.

The Draft Criteria are divided into three categories: the first, Pass/Fail Criteria reflect public comments received in February. The Pass/Fail Criteria will be used to identify all potential landfill sites. The remaining criteria, Site Evaluation Criteria and Final Decision Criteria are the subject of extended public review and will be used to evaluate and limit potential sites to a few final sites.

ISSUES:

What specific criteria should be used to determine if a site is suitable for a landfill? How should criteria be rated in relationship to one another?

**HOW TO
COMMENT:**

PUBLIC HEARING MARCH 27, 1986:

IN WRITING BY MARCH 31, 1986:

7:00 p.m.
The Portland Building
Auditorium, 2nd Floor
1120 S.W. Fifth, Portland
Portland, OR

Dept. of Environmental Quality
Attn: Kent Mathiot, Facility
Siting Coordinator
P.O. Box 1760
Portland, OR 97207

**FOR MORE
INFORMATION:**

To receive a copy of the Draft Site Selection Criteria, call Carol Harris at 229-5759. Copies are also available for review at: DEQ, 522 S.W. Fifth - 6th Floor, Portland; Clackamas County Library, 999 Library Ct., Oregon City; Multnomah County Library, 802 S.W. 10th, Portland; and Beaverton Public Library, 12500 S.W. Allen Blvd., Beaverton.

**WHAT IS THE
NEXT STEP:**

When the comment period has ended, DEQ will incorporate testimony into the final criteria report to be reviewed by the Environmental Quality Commission by April 25, 1986. After this review, DEQ will begin evaluating and rating the potential sites for the Metro Area.

SB5427



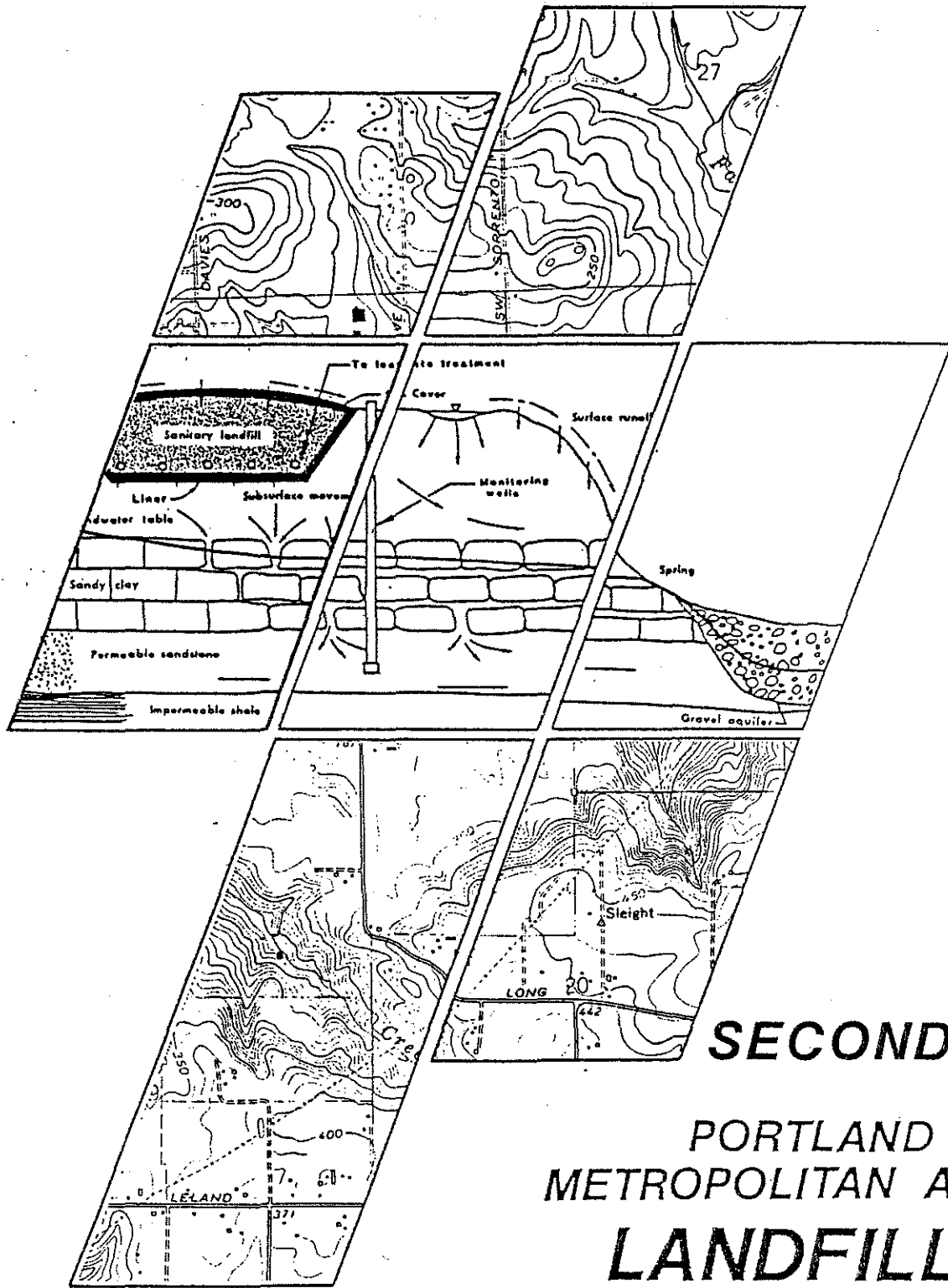
P.O. Box 1760
Portland, OR 97207

8/16/84

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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.



SECOND DRAFT

PORTLAND
METROPOLITAN AREA
**LANDFILL
SITING CRITERIA**

FEBRUARY 1986

BROWN AND CALDWELL



CONSULTING ENGINEERS

February 27, 1986

Department of Environmental Quality
522 Southwest Fifth Avenue
Portland, Oregon 97207

13-2649-01

Attention: Mr. Steve Greenwood, Facility Siting Project Manager

SECOND DRAFT REPORT--LANDFILL SITING CRITERIA

Enclosed for your review is the second draft of the landfill siting criteria report for the Portland Metropolitan Area. This draft includes many of the suggestions received thus far in the public involvement process. We look forward to working with you and your staff in the coming weeks to obtain and incorporate further comments and prepare the final report.

BROWN AND CALDWELL

A handwritten signature in cursive script that reads "Steven J. Krugel". The signature is written in dark ink and is positioned above the printed name and title.

Steven J. Krugel
Project Manager

SJK:lad
Enclosure

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SECTION 1

INTRODUCTION

The Portland Metropolitan Area is faced with the challenge to site a landfill as part of its comprehensive environmentally sound solid waste management program. This report establishes the siting criteria that will be used to identify potential sites, to evaluate the sites, and to complete the final site selection. The report includes recommended criteria weights and measurements that will be used in the site screening process.

Background

Multnomah, Clackamas, and Washington Counties produce nearly a million tons of municipal solid waste each year. Most of this waste is disposed of at the St. Johns Landfill in north Portland, which is the region's only general-purpose landfill. However, St. Johns Landfill is scheduled to reach capacity by 1989.

The 1985 Oregon Legislature found that the establishment of a site for the disposal of solid waste in the Portland Metropolitan Area is necessary to protect the health, safety, and welfare of the citizens. It passed Senate Bill 662, which gives the Oregon Department of Environmental Quality (DEQ) the authority to study, recommend, and site a solid waste disposal facility. Senate Bill 662 requires development of a comprehensive solid waste program that will substantially reduce the amount of solid waste placed in landfills. This reduction will be achieved by recycling and reuse, processing, and resource recovery. Senate Bill 662 is included in Appendix A of this report.

The DEQ has established a schedule to ensure compliance with Senate Bill 662. Target dates in the schedule established by the DEQ are as follows:

<u>Target date</u>	<u>Action</u>
July 1, 1986	Identification of 12 to 18 sites for further study.
October 1, 1986	Selection of 2 to 4 sites for detailed feasibility study.
July 1, 1987	Environmental Quality Commission must issue order to establish the disposal site by this date.

The DEQ is planning a three-phase siting process that will culminate in the ordering of a site by the Environmental Quality Commission (EQC). The three phases are as follows:

Phase I - Site Identification

Phase II - Site Evaluation

Phase III - Feasibility Analysis and Selection

This report represents the first part of Phase I, whereby siting criteria are established and the framework for measurement is developed. Specific site identification will commence after the criteria are accepted.

Purpose

The purpose of this report is to present the siting criteria that will be used to identify the best sites. Three types of criteria have been developed.

1. Pass/fail criteria. Pass/fail criteria have been established to eliminate from further consideration all of the sites with unacceptable characteristics.
2. Evaluation criteria. Evaluation criteria have been developed to measure and compare the suitability of the remaining sites.
3. Final decision criteria. These criteria will be used to select the best site from the final alternatives.

Methodology

The process of developing siting criteria for this project was structured to allow input from a wide variety of people. The criteria were developed using a multidisciplinary team of landfill design and operations specialists, environmental engineers, geologists, hydrologists, geotechnical engineers, and environmental assessment specialists. A brief description of the professional experience of each principal team member is given in Appendix B.

The first step in the process was to establish a framework under which the criteria could be logically organized and weighted to allow a numerical comparison of alternative sites. A wide variety of frameworks were evaluated, and a system was selected which has been used extensively nationwide. Although the general approach is similar to those used previously in the Portland area and on other Northwest projects, the system is organized somewhat differently, allowing a fresh look at the landfill siting process.

The next step in the project was to assign categories to each team member, related to their field of expertise, under which they were to develop specific site selection criteria. A criteria form was developed and sent to each team member to ensure consistent format. To minimize biases, at least two and as many as seven team members independently developed criteria under each category. When the first round of completed criteria forms were returned, redundant criteria were consolidated, and those not appropriate to the conditions of this project area were rejected. The complete package of all criteria was then sent to each team member for further consolidation and rewriting where required.

The final step in the process was to carefully review the second round of criteria for completeness. They were compared to other existing sets of criteria, including those developed by the Multnomah County Task Force on Solid Waste Procedures, draft DEQ criteria, and others used on similar projects in the Northwest. Where elements of an individual criterion from one of those other sources could improve the criterion developed by our project team, that element was incorporated into this project. The final set of criteria was then edited to ensure consistent format.

SECTION 2

CRITERIA ORGANIZATION

The landfill siting criteria presented in this report are organized into three major categories which will be used sequentially in the site selection process. These categories are as follows:

1. Pass/fail criteria.
2. Site evaluation criteria.
3. Final decision criteria.

Each of the three categories is further divided into five subcategories: political, regulatory, environmental, technical, and economic. Table 2-1 presents an outline of the criteria. The following discussion explains the purpose and use of each of the criteria categories.

Description of Major Categories

Landfill site selection requires an organized approach to locate the most suitable site. The three major steps in that process include identification of all the feasible sites, evaluation or screening to select the best few sites for detailed analysis, and a thorough investigation and comparison of the final candidates. The three major categories of criteria were developed to be used in these three steps.

Pass/Fail Criteria. A potential landfill site will be located somewhere within an area of several thousand square miles surrounding the Portland Metropolitan Area. To bring potential sites into focus, certain constraints on where a site can be located must be identified. Obviously incompatible areas must be eliminated--this is the purpose of the pass/fail criteria. If an area passes an individual pass/fail criterion, it may be suitable for consideration as a landfill. If an area fails the criterion, it is automatically eliminated from further consideration. An example of a pass/fail criterion is the regulatory requirement to keep landfills at least 10,000 feet from airport runways used by turbojet aircraft. All areas within 10,000 feet of these runways will be eliminated from consideration.

Table 2-1. Landfill Siting Criteria Categories

I. PASS/FAIL CRITERIA

Political
Regulatory
Environmental
 Surface water
 Groundwater
 Natural habitat
 Land use
 Air quality
 Social/cultural
 Aesthetic
Technical
Economic

II. SITE EVALUATION CRITERIA

Political
Regulatory
Environmental
 Surface water
 Groundwater
 Natural habitat
 Land use
 Air quality
 Social/cultural
 Aesthetic
Technical
Economic

III. FINAL DECISION CRITERIA

Political
Regulatory
Environmental
 Surface water
 Groundwater
 Natural habitat
 Land use
 Air quality
 Social/cultural
 Aesthetic
Technical
Economic

Although the principal use of the pass/fail criteria will be in the initial identification of potential sites, the criteria will remain in force as the process continues. Information about sites will surface throughout the site selection process; and if new information indicates the site fails one of these criteria, the site will be eliminated.

Site Evaluation Criteria. When the initial process of identifying potential sites is complete, there may be several hundred sites identified. Obviously, detailed on-site investigations cannot be undertaken for this many areas. The number of sites to be considered must be screened down to the few best sites for detailed studies. The site evaluation criteria have been established for this purpose. These criteria will be used to compare the alternative sites and screen out the least desirable. Information used during this process will be that which is available in the literature, previous reports or file data, aerial photographs, maps, public input, surface reconnaissance and, in the later stages of the process, minor on-site investigations. At the end of the screening process, the best 2 to 4 sites will remain for further evaluation.

Final Decision Criteria. The best 2 to 4 sites will undergo detailed on-site exploration and investigation. These investigations will develop data which will be used to refine the comparison of the sites and to select the best site from among the final alternatives. The final decision criteria will include many of the original site evaluation criteria. They will also include some site evaluation criteria modified to reflect the greater amount of data available, and some new criteria developed to accommodate previously unavailable site data.

Description of Subcategories

Each of the three major categories is divided into the same five subcategories: political, regulatory, environmental, technical, and economic. The purpose of these subcategories is to provide a tool to help guide the site selection process. They help direct the project team to evaluate potential sites from all possible perspectives. For some subcategories, there may not be any criteria under a given major category. However, in the criteria outline the subcategory headings remain as a stimulus for criteria review as the project progresses. The following paragraphs discuss each of the five subcategories.

Hazardous & Solid Waste Division
Dept. of Environmental Quality
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Political. Political criteria include factors related to political boundaries and jurisdictions. Senate Bill 662, which gives the Environmental Quality Commission authority to site a landfill for the Portland Metropolitan Area, is also considered under this category. This bill also addresses political boundaries. A copy of the bill is included in Appendix A.

Regulatory. This category addresses all laws, regulations, or regulatory agency actions which impact landfill site selection. Some of the most significant laws in addition to Senate Bill 662 include the Resource Conservation and Recovery Act (RCRA), Oregon Revised Statutes (ORS) 459, and Oregon Administrative Rules (OAR) 340-61.

Environmental. It is essential that a landfill site be found which has the best natural characteristics for protecting the environment. These natural characteristics back up and support the built-in features which protect the environment. A good technical design can mitigate many undesirable natural site characteristics.

This category is subdivided into the various environmental elements: surface water, groundwater, natural habitat, land resources, air quality, social and cultural resources, and aesthetic environment. Criteria were selected that address the natural conditions which protect that element of the environment. As an example, the criterion for natural groundwater protection addresses the types of subsurface soils on the site and their ability to restrict downward movement of leachate.

Technical. The technical category addresses characteristics of the site which relate more to site design and operation than strictly to protection of the environment. Examples of technical criteria are site capacity and constructability of site soils.

Economic. The cost of the landfill is an important criterion. However, detailed costs of individual sites will not be known until the final stages of site selection. Economic criteria established for earlier stages in the process relate more generally to factors which influence cost, such as distance of the site from the solid waste source. As the site selection process progresses, many technical criteria will become purely economic concerns. Mitigation measures to protect against environmental impacts will also influence cost.

SECTION 3

SITE RANKING

In the selection of an acceptable landfill site, a great many factors must be taken into account. Environmental, regulatory, economic, and other issues all need to be considered. However, not all factors are equally important. Therefore, a way must be found to incorporate their relative importance into the selection process.

A numerical scoring system has been developed that will be used to compare sites. Good features are given a higher score and the sites with a larger score are better than sites with a lower score.

Criteria Rating

Landfill sites and the surrounding areas will have physical features that may be good or bad for building a landfill. Specific criteria are proposed that will be used to evaluate how well sites are suited for a landfill. Each criterion includes a range of features that are given a numerical score. The features that are the best for a landfill have a high rating, while the features that are not as good receive a lower rating. The ratings range from "10" for the best rating to "1" for the worst rating. Rating of 4 to 6 were given to conditions typically found on acceptable sites. Different ratings will be assigned to each site for each criterion, based on how well the site is suited for a landfill.

Each criterion has a description of different features and assigns a rating to these features. For example, adjacent land use (Criterion No. 42) has the following descriptions and ratings:

Description	Recommended Rating (1 to 10)
Vacant land, pasture land, or major disturbed lands.	10
Forest or heavy industrial.	8
Light industrial or agricultural.	6
Residential or commercial.	2

For this criterion, a site located in a rural area will receive a higher rating than a site near residential or commercial development.

Criteria Weighting

Giving more weight to some criteria than others is a way of showing that some criteria used for siting are more important than other criteria. Criteria are considered most important when they are related to significant environmental impacts that could be irreversible or difficult to mitigate. For example, groundwater contamination has a significant environmental impact that is very hard to reverse should contamination begin. Therefore, groundwater criteria have been assigned a high weight.

The most important criteria receive the highest weighting, which is "10." Criteria of lesser importance are assigned lower weightings. The least important criteria receive a weighting of "1."

Weighting and Rating Methodology

The recommended weightings and ratings of criteria were developed by the members of the project team. A brief description of the team members is included in Appendix B. Team members weighted and rated criteria in their specific field of expertise. The total weights of all criteria within each category were then compared to assure a proper distribution of weights. The distribution of weights among criteria categories was compared to the distributions in similar projects to ensure consistency with accepted practice.

Generally, criteria and categories were weighted more heavily when potential impacts would be difficult to mitigate or impacts would not be reversible. Higher weights were given to some final decision criteria over comparable evaluation criteria. This was done when much more information would be made available during the on-site feasibility investigations than would be available earlier in the evaluation process.

Scoring Summary

For evaluating the relative merit of alternative sites, both the site rating and the criteria weight are used. For each site, the criteria weight is multiplied by the rating, and the result is entered on the evaluation form.

In the example below, the adjacent land use criterion has been assigned a weight of 8. Site 1 is surrounded by forest and therefore has a rating of "8" for this criterion. Site 2 has

adjacent residential land use and has a rating of "2". On the evaluation form, the rating for each site is shown above the diagonal line and the score is shown below the diagonal line, as demonstrated below:

<u>No.</u>	<u>Criteria description</u>	<u>Weight</u>	<u>Site 1</u>	<u>Site 2</u>
42	Adjacent land use	8	8/64	2/16

This process is used for each criterion and the scores are summed for each site. The sites with the highest scores are the most desirable.

SECTION 4

PASS/FAIL CRITERIA

This section presents the pass/fail criteria. Table 4-1 summarizes the criteria under the appropriate subcategories. The table is followed by a one-page expanded description of each criterion. Criteria numbers from Table 4-1 are located at the top right-hand corner of each description sheet for convenient reference.

Although no specific pass/fail criterion is included concerning site acquisition potential, final consideration in the site selection process will only be given to those sites meeting both of the following conditions:

1. The State has the right of eminent domain over the site or a willing seller.
2. If the site is located in Yamhill, Columbia, or Marion County, the site has received land use approval.

Table 4-1. Pass/Fail Criteria

No.	Criteria Description
P/F 1	Political Political boundaries
P/F 2	Regulatory Proximity to airports
P/F 3	Sole source aquifer
P/F 4	Environmental Floodway
P/F 5	Active faults
P/F 6	Threatened and endangered species
P/F 7	Compatible land use
P/F 8	Historic and archaeological preservation
P/F 9	Technical Slope
P/F 10	Site capacity

PASS/FAIL CRITERION

Criteria Category: Political

Criterion Statement: Political Boundaries--Landfill sites are to be located within the Oregon counties of Multnomah, Washington, Clackamas, Yamhill, Marion or Columbia.

Criterion Discussion: Senate Bill 662 provides for siting a landfill outside the tri-county Portland metropolitan area, but only if the city or county which has jurisdiction approves the site and method of solid waste disposal. (Subsection (2) of Section 3).

PASS/FAIL CRITERION

Criteria Category: Regulatory

Criterion Statement: Proximity to Airports--The active landfill will be located outside a specified distance from airport runways as defined by RCRA.

Criterion Discussion: The Resource Conservation and Recovery Act (RCRA) specifies that no landfill shall be located closer than 5,000 feet from airport runways used by piston-type aircraft or closer than 10,000 feet from runways used by turbojet aircraft. The purpose of this requirement is to protect aircraft from hazards due to striking birds which may be attracted to the landfill operations. The specified distances are to assure safe takeoffs and landings when aircraft pass through altitudes heavily populated with birds. The active landfill is defined as the area to be filled with solid waste, used for borrow area, or other operating facilities.

PASS/FAIL CRITERION

Criteria Category: Regulatory - Groundwater

Criterion Statement: Sole Source Aquifer--Landfill will not be sited over the recharge zone of an aquifer which has been declared sole source by the United States Environmental Protection Agency as of January, 1986.

Criterion Discussion: No aquifers in the study area are currently designated as sole source by the EPA. Any sites being considered for sole source aquifer status will be evaluated using site evaluation and final decision criteria.

PASS/FAIL CRITERION

Criteria Category: Environmental-Surface Water

Criterion Statement: Floodway--The active landfill will not be located in a floodway.

Criterion Discussion: Landfills placed in a river floodway will restrict the normal flood flow and may cause the upstream flood level to rise. This will result in increased damage to adjacent areas. The floodway is the area of heavy current through which most of the flood waters pass. Portions of the landfill could easily be eroded and carried downstream. Protection of the landfill from washout would be difficult. During flooding, the landfill would be inoperable. Existing floodway maps prepared by the U.S. Army Corps of Engineers will be used to define the floodway areas. The active landfill is defined as the area to be filled with solid waste, used as borrow, or other operating facilities.

PASS/FAIL CRITERION

- Criteria Category: Environmental-Groundwater/Surface Water
- Criterion Statement: Active Faults--Landfill environmental protection facilities will not be sited over the trace of an active geologic fault.
- Criterion Discussion: Surface rupture of an active fault could cause failure of environmental protection facilities. Thus, active fault traces are unsuitable locations for landfills. Active faults are generally defined as faults having undergone tectonic displacement during Holocene geologic time or over the past 12,000 years. Environmental protection facilities include landfill liners; leachate collection, storage, and treatment facilities; surface water control, and gas collection and treatment systems.

PASS/FAIL CRITERION

Criteria Category: Environmental - Natural Habitat

Criterion Statement: Threatened and Endangered Species--The active landfill will not be placed in an area which is a critical habitat for listed threatened or endangered species, either fish, wildlife, or plants.

Criterion Discussion: The Resource Conservation and Recovery Act (RCRA) specifies that no facility or practice shall cause or contribute to the taking of any listed endangered or threatened species of plants, fish or wildlife or result in the destruction or adverse modification of the critical habitat of those species. Listed species and critical habitat are identified by the U.S. Fish and Wildlife Service, Department of the Interior.

PASS/FAIL CRITERION

Criteria Category: Environmental - Land Use

Criterion Statement: Compatible Land Use--Areas with current land uses which are clearly incompatible with landfill operations will be eliminated from consideration.

Criterion Discussion: The landfill site will not be sited on lands with clearly incompatible uses. The following are defined as incompatible uses:

1. Paved state, county, or federal highways.
2. Improved municipal, county, or state parks.
3. Residential areas with 5 or more existing dwellings within a circular area having a diameter of 1,200 feet (see note a).
4. Developed commercial areas within an urban growth boundary.
5. Bull Run water shed.
6. Willamette Greenway.
7. National parks or recreation areas.
8. Approved state or federal scenic waterways.
9. National forests.

Notes:

- a. This criteria represents a residential density of approximately one dwelling per 5 acres.

PASS/FAIL CRITERION

Criteria Category: Environmental - Social/Cultural

Criterion Statement: Historic and Archaeological Preservation--The active landfill will not be located within 1,000 feet of any site recognized on the National or State Register as of January 1986.

Criterion Discussion: All sites on the National or State Register should be eliminated from further consideration. These sites have unique historic or archaeological significance which should be preserved. The active landfill is the area to be filled with solid waste, used for borrow, or other operating facilities.

PASS/FAIL CRITERION

Criteria Category: Technical

Criterion Statement: Slope--Active landfill area will be provided having a slope of less than 25 percent.

Criterion Discussion: When slopes are greater than 25 percent, equipment, especially trucks, have difficulty with access and mobility. With high slopes facilities including landfill liners, borrow areas, and drainage facilities are difficult to construct and maintain.

The active landfill is the area to be filled with solid waste, used for borrow, or other operating facilities.

During the site screening process the slope criterion will be used as a screening tool, and slope will be measured off of U.S. Geological Survey 7 1/2 minute quadrangle maps (U.S.G.S. 15 minute maps will be used for those areas where 7 1/2 minute maps are not available.) During detailed feasibility studies, isolated areas with slopes greater than 25 percent on any of the selected sites will be evaluated for suitability for active landfill facilities.

PASS/FAIL CRITERION

Criteria Category: Technical

Criterion Statement: Site Capacity--A site or combination of sites will be selected with at least a 15-year capacity.

Criterion Discussion: Sites with less than a total 15-year life would be impractical, given the time required to locate, design, and construct the facilities. Landfill capacity will depend on factors in addition to simple land area. However, even the most compact design would require at least 300 acres to develop a site with suitable buffer area. This assumes that this is one of three equal sized small sites with a total capacity of 15 years and that 40 percent of the solid waste generated in the Portland area is recycled or recovered. Areas smaller than this should be eliminated during site identification. As identified sites are evaluated, preliminary designs will be formulated and the site or sites should be eliminated if they do not have a total 15-year capacity.

For this criterion, site refers to the active landfill area plus all buffer areas purchased or controlled with the site.

SECTION 5

SITE EVALUATION CRITERIA

This section presents site evaluation criteria. Table 5-1 summarizes the criteria under the appropriate subcategories and includes the criteria weights. Table 5-2 is an example site evaluation form which will be used to rate and compare alternative sites. The table is followed by one-page expanded descriptions of each criterion. The descriptions include the criterion weight and rated ranges of acceptability. Criteria numbers from Table 5-1 are located at the top right-hand corner of each description sheet for convenient reference.

Table 5-1. Site Evaluation Criteria and Weightings

No.	Criteria Description	Criteria Weight	No.	Criteria Description	Criteria Weight
	Political/Regulatory No evaluation criteria in these categories		60	Social/Cultural Cultural resources	4
	Environmental			Aesthetic	
	Surface water		70	Natural screening	6
10	Flood protection	6	71	Unique visual environments	4
11	Site runoff	4	72	Buffer area	6
12	Surface drainage	6	73	Access routes	5
13	Groundwater discharge	4		Subtotal Aesthetic	21
14	Beneficial use			Subtotal Environmental	126
	Subtotal Surface Water	20		Technical	
	Groundwater		80	Site capacity	8
20	Flow systems	6	81	Gas control	4
21	Natural protection	8	82	Surface drainage control	2
22	Aquifer characteristics	8	83	Subsurface drainage	2
23	Depth to groundwater	4	84	Leachate handling	7
24	Existing beneficial use	10	85	Slopes	2
25	Groundwater quality	4	86	Slope stability	3
26	Sole source aquifer		87	Soils-site operation	4
	Subtotal Groundwater	40	88	Groundwater monitoring	3
	Natural Habitat		89	Climatic factors	2
30	Rare or endangered species	8		Subtotal Technical	37
31	Terrestrial habitat	4		Economic	
32	Habitat disturbance	2	90	Distance from solid waste	10
33	Aquatic habitat	4	91	Distance to cover material	6
	Subtotal Natural Habitat	18	92	Access	4
	Land Use			Subtotal Economic	20
40	Zoning	7		Total	183
41	Current site use	4			
42	Adjacent land use	8			
	Subtotal Land Use	19			
	Air quality				
50	Air quality standards	4			

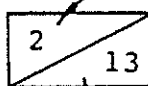
Note: Highest rating of sited acceptability under each criterion is 10. Therefore, highest possible score is $10 \times 183 = 1,830$.

No.	Criteria Description	Weight	Site			
			1	2	3	4
	Air quality					
50	Air quality standards	4	/	/	/	/
	Social/Cultural					
60	Cultural resources	4	/	/	/	/
	Aesthetic					
70	Natural screening	6	/	/	/	/
71	Unique visual environments	4	/	/	/	/
72	Buffer area	6	/	/	/	/
73	Access routes	5	/	/	/	/
	Subtotal Aesthetic	21				
	Subtotal Environmental	126				
	Technical					
80	Site capacity	8	/	/	/	/
81	Gas control	4	/	/	/	/
82	Surface drainage control	2	/	/	/	/
83	Subsurface drainage	2	/	/	/	/
84	Leachate handling	7	/	/	/	/
85	Slopes	2	/	/	/	/
86	Slope stability	3	/	/	/	/
87	Soils-site operation	4	/	/	/	/
88	Groundwater monitoring	3	/	/	/	/
89	Climatic factors	2	/	/	/	/
	Subtotal Technical	37				
	Economic					
90	Distance from solid waste	10	/	/	/	/
91	Distance to cover material	6	/	/	/	/
92	Access	4	/	/	/	/
	Subtotal Economic	20				
	Total	183				

Table 5-2. Landfill Site Evaluation Summary Matrix

No.	Criteria Description	Weight	Site			
			1	2	3	4
	Political/Regulatory No evaluation criteria in these categories					
	Environmental					
	Surface water					
10	Flood protection	6	/	/	/	/
11	Site runoff	4	/	/	/	/
12	Surface drainage	6	/	/	/	/
13	Groundwater discharge	4	/	/	/	/
14	Beneficial use		/	/	/	/
	Subtotal Surface Water	20				
	Groundwater					
20	Flow systems	6	/	/	/	/
21	Natural protection	8	/	/	/	/
22	Aquifer characteristics	8	/	/	/	/
23	Depth to groundwater	4	/	/	/	/
24	Existing beneficial use	10	/	/	/	/
25	Groundwater quality	4	/	/	/	/
26	Sole source aquifer		/	/	/	/
	Subtotal Groundwater	40				
	Natural Habitat					
30	Rare or endangered species	8	/	/	/	/
31	Terrestrial habitat	4	/	/	/	/
32	Habitat disturbance	2	/	/	/	/
33	Aquatic habitat	4	/	/	/	/
	Subtotal Natural Habitat	18				
	Land Use					
40	Zoning	7	/	/	/	/
41	Current site use	4	/	/	/	/
42	Adjacent land use	8	/	/	/	/
	Subtotal Land Use	19				

KEY:



ACCEPTABILITY RATING OF SITE RELATIVE TO
SPECIFIED CRITERION

SITE RATING MULTIPLIED BY WEIGHT OF CRITERION

SITE EVALUATION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Flood Protection

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Outside recognized floodplain.	10
Inside 100 to 500 year floodplain of a minor river or creek.	8
Inside 100 to 500 year floodplain of a major river or creek.	5
Inside 100 year or less floodplain of a minor river.	3
Inside 100 year or less floodplain of a major river or other stream requiring extensive flood control structures.	1

Criterion Discussion:

Flooding requires erosion/debris flow controls and protection that are more significant on major streams than on minor streams. Location in any 100 year floodplain could have significant technical and regulatory requirements for mitigation. Restriction of the flood area of a channel must be considered because reducing the area at a point increases the flood level, area, and duration upstream from that point.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Site Runoff Characteristics

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
The only runoff results from direct precipitation on the site.	10
Intermittent streams or channels are present on the site.	6
Major overland flow or regional perennial drainage channel crosses the site.	1

Criterion Discussion:

Surface drainage crossing a site affects potential impacts on water quality of receiving streams. Larger volumes of regional drainage crossing the site will have a greater potential impact on receiving streams and will be more difficult to effectively mitigate.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Surface Drainage to Surface Water

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Site surface runoff does not drain to a lake or stream (internal drainage).	10
Site drains to a major river with a low water flow greater than 4,000 cfs.	8
Site drains to a minor river with a low water flow between 2,000 and 4,000 cfs.	5
Site drains to a stream with a low water flow less than 2,000 cfs with no significant water supply or recreational use.	5
Site drains to a stream with low water flow less than 2,000 cfs and with significant water supply or recreational uses.	2
Site drains to a lake or wetlands.	1

Criterion Discussion:

The potential hazard to surface water quality is related to landfill runoff or collected leachate reaching surface water bodies which are used for water supply or recreation. In most cases, this potential hazard can be mitigated by leachate control and runoff/runoff protection. This is an important factor because there are specific federal and state regulations protecting surface water quality. This criterion uses stream size and existing beneficial use as a measure of the potential for impact. For this criterion, low flow is defined as the minimum monthly average flow over the last 5 years of record.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Groundwater Discharge to Surface Water

Recommended criterion weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Site groundwater drains to a major river with low water flow greater than 4,000 cfs.	10
Site drains to a minor river with low water flow between 2,000 and 4,000 cfs.	7
Site drains to a stream with low water flow less than 2,000 cfs with no significant water supply or recreational use.	5
Site drains to a stream with low water flow less than 2,000 cfs with significant water supply or recreational use.	2
Site drains to a lake or wetlands.	1

Criterion Discussion:

Groundwater which discharges to surface streams has the potential for affecting both groundwater and surface water resources. This criterion uses stream size and use as a measure of potential impact. For this criterion, low water flow is defined as the minimum monthly average flow over the last 5 years of record. Specific hydraulic properties of the aquifers such as flow velocities are also extremely important and will be used in the final decision factors. Needed data will be collected during detailed on-site investigations.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Beneficial use

Recommended criterion
weighting (1 to 10):

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
To be added	

Criterion Discussion:

SITE EVALUATION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Flow Systems

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Regional and local discharge area.	10
Local and intermediate discharge area and area of lateral (transitional) regional flow.	8
Regional and intermediate discharge/local recharge.	6
Regional recharge/local discharge.	5
Regional and local recharge area.	1

Criterion Discussion:

The proximity of landfill to the recharge/ discharge areas of an aquifer is not as significant as the aquifer's downgradient use. However, location of the landfill in the flow system offsets the ability to prevent and mitigate potential impacts. Contaminants entering a recharge area of an aquifer have a greater potential for widespread movement.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Natural Protection

Recommended criterion
weighting (1 to 10): 8

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Thick sequence (20 feet or greater) of uniform unfractured low permeability (10^{-6} cm/sec or less) material between bottom of landfill and the regional groundwater table.	10
Thick sequence (40 feet or greater) of moderately permeable (10^{-6} to 10^{-4} cm/sec) material between landfill and the regional groundwater table.	7
Between 10 and 20 feet of uniform unfractured low permeability material between bottom of landfill and the regional groundwater table.	6
Between 10 and 40 feet of moderately permeable material between the landfill and regional water table.	3
Less than the amount of material stated above or highly permeable material (coarse-grained sediments or highly fractured bedrock) extends from bottom of landfill to regional water table.	1

Criterion Discussion:

Subsurface materials of fine-textured soil provide natural protection of the groundwater by slowing the rate of movement of contaminants and by removal of contaminants by filtering and chemical attenuation.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Aquifer Characteristics

Recommended criterion
weighting (1 to 10): 8

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Unconsolidated fine-grained sediments with high clay content or low permeability bedrock (less than 10^{-6} cm/sec).	10
Unconsolidated coarse to fine sediments or moderately permeable bedrock (10^{-6} to 10^{-4} cm/sec).	5
Coarse-grained, clean, unconsolidated sediments or permeable highly fractured bedrock.	1

Criterion Discussion:

Coarse-grained, high permeability aquifers in unconsolidated sediments are the most easily impacted and the potential for off-site contaminant migration is high. Groundwater movement in fine-textured sediments and low permeability bedrock aquifers is typically quite slow, and the potential for negative impacts as a result of off-site migration is less. Groundwater flow patterns in fractured bedrock material can be difficult to predict, monitor, and control if mitigation is required. This criterion recognizes the potential for future development of the aquifer.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Depth to Groundwater and Natural Protection

Recommended criterion weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Deeper than 50 feet with good natural protection.	10
25 to 50 feet with good to moderate natural protection.	7
Shallower than 25 feet with moderate natural protection.	2
No natural protection regardless of depth.	1

Criterion Discussion:

The interrelationship between available natural protection (relatively impermeable sediments which restrict downward flow of water) and the depth to groundwater is an important factor. Shallow groundwater without good natural soil barriers affords little protection or attenuation, while deep groundwater with a good soil barrier provides good protection and contaminant removal. Seasonal fluctuations in groundwater level must also be evaluated; the above described depths are estimated from the average seasonal high water level to the base of any liner or leachate collection system.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Existing Beneficial Use

Recommended criterion
weighting (1 to 10): 10

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No wells or developed springs in the downgradient aquifer system of the site.	10
No wells or developed springs within 1 mile of the downgradient aquifer system of the site.	9
No wells or developed springs within 1/2 mile of the downgradient aquifer system of the site.	7
No wells or developed springs within 1/4 mile of the downgradient aquifer system of the site.	4
Numerous wells or developed springs adjacent to the site.	1

Criterion Discussion:

Proximity of wells and/or developed springs is a measure of groundwater availability and use. Also, there could be wells close to the site that could be producing from an aquifer which is hydraulically separate from the site (for example alluvial aquifers in adjacent valleys separated by an impermeable bedrock ridge). Distance to the wells is of importance primarily in terms of mitigation. The closer the wells are to the site, the more difficult it is to identify and mitigate potential affects before they reach the point of use.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Site-Specific Groundwater Quality

Recommended criterion weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Natural groundwater quality unacceptable for any use because of high dissolved solids or other quality characteristic.	10
Some constituents exceed primary or secondary drinking water standards but could be used if no other source is available.	4
Excellent quality suitable for any use, including municipal supply.	1

Criterion Discussion:

The better the existing quality, the more extensive the mitigative measures required for protection of existing or potential beneficial use.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Sole Source Aquifer

Recommended criterion
weighting (1 to 10):

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
To be added	

Criterion Discussion:

SITE EVALUATION CRITERION

Criteria Category: Environmental - Natural Habitat

Criterion Statement: Protection of Rare or Endangered Species

Recommended criterion
weighting (1 to 10): 8

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No rare or endangered species present or impacted.	10
Presence of or impacts to rare or endangered species but not unique or critical habitat.	1

Criterion Discussion:

Sites with critical habitat for rare or endangered species were eliminated by a pass/fail site identification criterion. This site evaluation criterion recognizes that the presence of rare or endangered species may be acceptable if no critical habitats are impacted.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Natural Habitat

Criterion Statement: Protection of Terrestrial Habitat of
Species Not Rare or Endangered

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Areas of low revegetation potential, low fertility, and low wildlife productivity.	10
No unique species of sport, spectator, commercial, or educational value present.	7
Presence of unique species of sport, spectator, commercial, or educational value but not critical habitat. Habitat disturbance can be mitigated.	4
Critical habitat for unique species of sport, spectator, commercial, or educational value. Habitat disturbance cannot be mitigated.	1

Criterion Discussion:

This criterion rates the terrestrial habitat with regard to presence of unique species of local interest which are not on the rare or endangered list. Ratings are with respect to the degree to which habitat would be impacted and the extent to which it could be enhanced, replaced, or protected in other areas as mitigation for its disturbance on the landfill site.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Natural Habitat

Criterion Statement: Habitat Disturbance

Recommended criterion
weighting (1 to 10): 2

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Area currently disturbed.	10
Previously disturbed and not reestablished in original, but in new wild environment.	7
Previously disturbed but reestablished original environment.	3
Previously undisturbed - natural state such as old growth trees.	1

Criterion Discussion:

This criterion recognizes the importance of preserving natural undisturbed habitat. The second and third range of acceptability distinguish between the habitat which has developed on a site after a previous disturbance. More important is placed on the site with its original natural habitat.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Natural Habitat
 Criterion Statement: Protection of Aquatic Habitat of
 Species Not Rare or Endangered

Recommended criterion
 weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Surface drainage or groundwater discharge to stream with low water flow greater than 4,000 cfs.	10
Surface drainage or groundwater discharge to stream with low water flow between 2,000 and 4,000 cfs.	5
Drainage of surface or groundwater to streams of low water flow less than 2,000 cfs without identified resident or anadromous sport fisheries.	5
Drainage of surface or groundwater to lakes, wetlands, or to streams of low water flow less than 2,000 cfs with identified resident or anadromous sport fisheries.	1

Criterion Discussion:

This criterion uses stream flow to measure the potential for impact on aquatic habitat from an assumed constant landfill source. Other environmental characteristics which attenuate or promote travel of potential contaminants from a landfill to a surface water body are addressed in the environmental subcategory on surface water. Low water flow for this criterion is defined as the minimum monthly average flow over the last 5 years of record. The U.S. Fish and Wildlife Service is currently classifying all named streams in the state with regard to their habitat value. This work is sponsored by the Bonneville Power Administration and when complete, classifications should be incorporated into this criterion.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Land Use

Criterion Statement: Zoning

Recommended criterion
weighting (1 to 10): 7

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Forest with Cubic Foot Site Class IV or higher or heavy industrial.	10
Forest with Cubic Foot Site Class III or EFU zone with Class III or IV soils.	8
EFU zone with Class I or II soils, Forest with Cubic Foot Site Class I and II, light industrial, residential greater than one-half acre per dwelling unit. Industrial or low density residential/commercial.	6
Residential less than one acre per dwelling unit, or commercial in urban framework designated area.	2

Criterion Discussion:

Cubic Foot Site Class designation is that applied to the dominant commercial tree species of the site. Unranked soils should be given the top score.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Land Use

Criterion Statement: Current Site Use

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Inactive quarry, open pit mines, or other major land disturbance.	10
Disturbed open land, pasture.	8
Non-commercially managed forest land.	4
Agricultural crops production and forest lands commercially managed.	3
SCS Agricultural Class I and II Soils (outside the Urban Growth Boundary).	2
Residential, commercial, industrial.	1

Criterion Discussion:

This criterion rates the value of the land as a commercial resource. This criterion may conflict with natural habitat criteria and is therefore weighted less than the criterion on rare and endangered species, but slightly greater than the criterion covering habitat for other important natural species. This criteria also recognizes the opportunity to eliminate existing unaesthetic land conditions such as inactive quarries or open pit mines.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Land Use

Criterion Statement: Adjacent Land Use

Recommended criterion
weighting (1 to 10): 8

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Vacant land, pasture land, or major disturbed lands.	10
Forest or heavy industrial.	8
Light industrial or agricultural.	6
Residential or commercial.	2

Criterion Discussion:

This criterion weights the potential for impact to neighboring uses.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Air Quality

Criterion Statement: Air Quality Standards

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Class III attainment area.	10
Class III nonattainment area.	7
Class II attainment area.	6
Class II nonattainment area.	4
Class I attainment area.	2
Class I nonattainment area.	1

Criterion Discussion:

A map of the area air shed should be evaluated. Sites located in noncritical areas minimize potential air pollution impacts from truck traffic, dust, and odor and are preferred.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Social/Cultural

Criterion Statement: Cultural, Historic, or Archaeological Resources

Recommended criterion weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No evidence of resources found on site.	10
Evidence of resources found but of little significance--not unique.	5
Significant resources found. Site excavation required.	1

Criterion Discussion:

If significant resources are found on a surface reconnaissance, site excavation will be required during final site evaluation. Sites included on the national or state registers of culturally or historically important sites will be eliminated by a pass/fail site identification criterion.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Aesthetic

Criterion Statement: Natural Screening

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Currently not visible from any existing homes or county roads within one mile of site.	10
Visible to up to 10 existing homes and/or clearly visible from county roads within one mile of site.	5
Visible to 10 to 20 existing homes and/or state highways within 1 mile of site.	3
Visible to more than 20 homes within 1 mile or a state highway within 1/4 mile of site.	1

Criterion Discussion:

This criterion recognizes the natural characteristics of the site which assist in screening the landfill operations from the view of neighboring residences and highways.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Aesthetic
 Criterion Statement: Unique Visual Environments

Recommended criterion
 weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Site Visual Quality Classification	
Rehabilitation	10
Modification	7
Partial Retention	3
Retention	2
Preservation	1

Criterion Discussion:

Bureau of Land Management and the U.S. Forest Service visual resource management systems will be used to classify viewsheds. Where classifications are not established, the objectives of the visual resources management system will be used to extrapolate a classification from maps and aerial photos.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Aesthetic

Criterion Statement: Buffer Area

Recommended criterion
weighting (1 to 10): 10

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No dwelling within 3,000 feet.	10
No dwelling within 2,000 feet.	8
0 to 5 dwellings within 2,000 feet.	7
6 to 20 dwellings within 2,000 feet.	3
More than 20 dwellings within 2,000 feet or more than 5 dwellings within 1,000 feet.	1

Criterion Discussion:

This criterion recognizes the importance of distance as a natural mitigation measure for potential noise, dust, odor, and visual impacts. The ratings of this criterion also recognize the ability to mitigate these aesthetic impacts by purchasing a few houses which could otherwise be severely impacted by virtue of being close to the site.

SITE EVALUATION CRITERION

Criteria Category: Environmental - Aesthetic

Criterion Statement: Access Routes

Recommended criterion
weighting (1 to 10): 5

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
All truck access through non-residential or very low density uses.	10
Access available between state or federal highway and the site through low to medium density development.	5
Access available between state or federal highway and site through high density development.	1

Criterion Discussion:

This criterion recognizes the environmental impact caused by traffic related to the landfill operations. Noise, safety, dust, and litter along access are potential impacts.

SITE EVALUATION CRITERION

Criteria Category: Technical
 Criterion Statement: Site Capacity

Recommended criterion
 weighting (1 to 10): 5

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Projected site life greater than 40 years.	10
Site life between 30 and 40 years.	8
Site life between 25 and 30 years.	6
Site life between 20 and 25 years.	4
Site life between 15 and 20 years.	2

Criterion Discussion:

A landfill with a long life is desirable because the cost of site identification, development, and closure are high. Sites with a projected life less than 15 years have been eliminated by a pass/fail criterion.

SITE EVALUATION CRITERION

Criteria Category: Technical
 Criterion Statement: Gas Control

Recommended criterion
 weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Site soils with low potential for gas migration and no structures within 1,500 feet of landfill perimeter.	10
Site soils with high potential for gas migration and no structures within 1,500 feet of landfill perimeter.	5
Site soils with high potential for gas migration and structures within 1,500 feet of landfill perimeter.	1

Criterion Discussion:

Lateral migration of gas should be minimized to the extent possible by natural conditions. Gas migrates considerable distances through loose, porous soils and collects in enclosed areas. More suitable sites are underlain by dense, fine-grained soils or rock and are distant from enclosed structures.

SITE EVALUATION CRITERION

Criteria Category: Technical

Criterion Statement: Surface Drainage Control

Recommended criterion
weighting (1 to 10): 2

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Site occupies isolated topographic high without severe perimeter relief.	10
Site occupies isolated topographic high with severe perimeter relief.	8
Site is flat and level with surrounding areas.	6
Site is lower than surrounding areas.	4
Site occupied by intermittent water course.	3
Site occupied by minor perennial water course.	2
Site occupied by major perennial water course.	1

Criterion Discussion:

Surface drainage should be such that water volumes to the site are minimized. An isolated, high site offers the greatest potential for identification of flow paths and reliable collection at perimeters. Gentle relief of perimeters affords less difficult construction.

Less-defined relief may require perimeter diversion, with the potential for off-site impacts and long-term maintenance.

SITE EVALUATION CRITERION

Criteria Category: Technical

Criterion Statement: Subsurface Drainage

Recommended criterion
weighting (1 to 10): 2

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No perched groundwater. Subsurface drainage not required.	10
Perched groundwater requiring perimeter subsurface drainage system.	5
Large volume of perched groundwater requiring extensive subsurface drainage.	1

Criterion Discussion:

Subsurface drainage is an important consideration during both construction and operation of a landfill. Certain types of geotechnical conditions do not lend themselves to drainage, which increases the cost for construction and operation and increases the amount of leachate.

SITE EVALUATION CRITERION

Criteria Category: Technical

Criterion Statement: Leachate Handling

Recommended criterion
weighting (1 to 10): 7

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Access to an acceptable wastewater treatment facility within 10 miles.	10
Access to an acceptable wastewater treatment facility in 10 to 20 miles.	6
On-site irrigation area available.	5
No on-site irrigation area or access to wastewater treatment facility within 20 miles.	1

Criterion Discussion:

Each site must have room for a leachate holding lagoon. From there the leachate can be pumped to an existing sewer for treatment in an existing wastewater treatment plant or it can be treated and disposed of on-site. Treatment and disposal on the site most often involves spray irrigation on a soil mantle with adequate treatment capabilities. A less desirable choice for on-site treatment involves construction of a wastewater treatment plant at the landfill.

SITE EVALUATION CRITERION

Criteria Category: Technical

Criterion Statement: Slopes

Recommended criterion
weighting (1 to 10): 2

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Working area slopes up to 10 percent.	10
Working area slopes 10 to 15 percent.	6
Working area slopes 15 to 25 percent.	2

Criterion Discussion:

Landfill should be located in an area of gentle topography and stable slopes. Steeper slopes promote erosion, instability, and access problems. Modification of slopes by adding fill, cutting, or increasing moisture by landfill operations tends to decrease stability. Slope failure could result in ground and surface water contamination. Slopes greater than 25 percent have been eliminated by a pass/fail criterion.

SITE EVALUATION CRITERION

Criteria Category: Technical
 Criterion Statement: Slope Stability

Recommended criterion
 weighting (1 to 10): 3

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Stable land form, no evidence of large scale slope failure or mass movement on or adjoining the site. Slope stability analysis not required prior to construction.	10
Inactive landslide topography--no evidence of recent movement; stability analysis required.	5
Active landslide areas--evidence of recent instability, risk of rapid mass movement, complex engineering analysis and mitigation measures required.	1

Criterion Discussion:

It is important to locate the landfill on a stable land form. Landslides can stop operations and contaminate ground and surface waters.

SITE EVALUATION CRITERION

Criteria Category: Technical

Criterion Statement: Soils - Site Operation and Construction

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Large volumes of silty clay or finer and sandy loam or coarser textured soils.	10
Adequate amount of silty clay or finer soils but inadequate amount of coarser textured soil.	8
Adequate amount of sandy loam or coarser textured soils but inadequate amount of finer textured soils.	6
Inadequate amount of both fine and coarse textured soils.	3
Little or no soil or soil-like material on site.	1

Criterion Discussion:

Soils of variable textural classifications are desirable for landfill operation and construction. Coarser soils are best suited for daily cover and other day-to-day landfill operations. High clay content soils are desirable for construction of liners, caps, and other environmental control feature. Deep, well-drained loamy soils are useful for on-site leachate treatment.

SITE EVALUATION CRITERION

Criteria Category: Technical

Criterion Statement: Groundwater Monitoring

Recommended criterion
weighting (1 to 10): 3

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Shallow (less than 50 feet) groundwater with horizontal flow in one direction or upward vertical flow in a homogeneous aquifer.	10
Shallow (less than 50 feet) groundwater with horizontal flow in one direction in non-homogeneous, unconsolidated aquifer materials.	7
Moderately deep (50 to 100 feet) groundwater with complex flow patterns in unconsolidated aquifer materials.	4
Deep groundwater (greater than 100 feet) with complex flow patterns in unconsolidated aquifer materials.	3
Groundwater flow through joints, fractures, or other structural features in a bedrock aquifer.	1

Criterion Discussion:

Monitoring is an important operational consideration, because complex monitoring systems are costly to construct, maintain, and operate. Monitoring becomes more difficult with increasing depth or aquifer complexity.

SITE EVALUATION CRITERION

Criteria Category: Technical
 Criterion Statement: Climatic Factors

Recommended criterion
 weighting (1 to 10): 2

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Mean average temperature and precipitation and no identified wind corridor.	10
Higher than average precipitation.	5
High winds and frequent freezing rains or snow.	1

Criterion Discussion:

Climatic extremes impact the site operation. High rainfall increases leachate volumes and makes soil difficult to work. High winds blow solid waste and contribute to visual impacts. Snow and ice create hazards for transport trucks.

SITE EVALUATION CRITERION

Criteria Category: Economic

Criterion Statement: Distance from Solid Waste Source

Recommended criterion
weighting (1 to 10): 10

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Closer than 5 miles.	10
5 to 10 miles.	8
10 to 15 miles.	6
15 to 20 miles.	4
20 to 25 miles.	2
Greater than 25 miles.	1

Criterion Discussion:

Distance referred to is the travel distance from the core metropolitan area to the site. The core metropolitan area will be defined during evaluation and is related to the location of existing and proposed transfer stations.

SITE EVALUATION CRITERION

Criteria Category: Economic

Criterion Statement: Distance to Cover Material Source

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Adequate cover on site.	10
Cover material supply within 5 miles.	5
Cover material supply between 5 and 10 miles.	4
Cover material supply between 10 and 20 miles.	2
Greater than 20 miles to adequate cover material supply.	1

Criterion Discussion:

Cover material is a major operational expense if it must be purchased and hauled in from a remote location.

SITE EVALUATION CRITERION

Criteria Category: Economic

Criterion Statement: Access

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Arterial built to applicable standards adjacent to site.	10
Improvement of up to 1 mile of existing road required.	8
Improvement of 1 to 3 miles of existing road or construction of up to 1 mile of new access road required.	6
Improvement of 3 to 6 miles of existing road or construction of 1 to 2 miles of new road required.	3
Greater than 6 miles of existing road improvement or construction of more than 2 miles of new road required.	1

Criterion Discussion:

Arterials are considered county, state, or federal traffic routes which have sufficient carrying capacity and right-of-way to handle all solid waste truck traffic. New road construction refers to all roads required up to the working area of the site.

SECTION 6

FINAL DECISION CRITERIA

This section presents the final decision criteria. Table 6-1 summarizes the criteria under the appropriate subcategories and includes the criteria weights. Table 6-1 is followed by one-page expanded descriptions of each final decision criterion. The descriptions include the criterion weight and rated ranges of acceptability. Criteria numbers from Table 6-1 are located at the top right-hand corner of each description sheet for convenient reference.

Table 6-1. Final Decision Factors and Weighting

No.	Criteria Description	Criteria Weight	No.	Criteria Description	Criteria Weight
	Environmental			Social/Cultural	
	Surface water		160	Cultural resources	4
110	Flood protection	6		Aesthetic	
111	Site runoff	4	170	Natural screening	6
112	Surface drainage	6	171	Unique visual environments	4
113	Groundwater discharge	4	172	Buffer area	6
114	Beneficial use		173	Access routes	5
	Subtotal Surface Water	20		Subtotal Aesthetic	21
	Groundwater			Subtotal Environmental	133
120	Flow systems	6		Technical	
121	Natural protection	8	180	Site capacity	8
122	Aquifer characteristics	8	181	Slopes	2
123	Depth to groundwater	4	182	Slope stability	6
124	Hydrologic boundaries	4	183	Groundwater monitoring	4
125	Existing beneficial use	10	184	Climatic factors	2
126	Groundwater quality	4	185	Resource Recovery	3
127	Geologic faults	3		Subtotal Technical	25
128	Sole source aquifer			Economic	
	Subtotal Groundwater	47	190	Present Worth Cost	40
	Natural Habitat			Subtotal Economic	40
130	Rare or endangered species	8		Total	198
131	Terrestrial habitat	4			
132	Habitat disturbance	2			
133	Aquatic habitat	4			
	Subtotal Natural Habitat	18			
	Land Use				
140	Zoning	7			
141	Current site use	4			
142	Adjacent land use	8			
	Subtotal Land Use	19			
	Air quality				
150	Air quality standards	4			

FINAL DECISION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Flood Protection

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Outside recognized floodplain.	10
Inside 100 to 500 year floodplain of a minor river or creek.	8
Inside 100 to 500 year floodplain of a major river or creek.	5
Inside 100 year or less floodplain of a minor river.	3
Inside 100 year or less floodplain of a major river or other stream requiring extensive flood control structures. Includes areas with a potential for channel migration.	1

Criterion Discussion:

Flood routing and site-specific flood calculations should be used to refine the flood criteria from the site evaluation phase of investigation. Restriction of the flood plain should be minimized to reduce upstream flooding effects.

FINAL DECISION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Site Runoff Characteristics

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
The only runoff results from direct precipitation on the site.	10
Intermittent streams or channels are present on the site.	6
Major overland flow or regional perennial drainage channel crosses the site.	1

Criterion Discussion:

Surface drainage crossing a site affects potential impacts on water quality of receiving streams. Larger volumes of regional drainage crossing the site will have a greater potential impact on receiving streams and will be more difficult to effectively mitigate.

FINAL DECISION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Surface Drainage to Surface Water

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Site surface runoff does not drain to a lake or stream (internal drainage).	10
Site drains to a major river with a low water flow greater than 4,000 cfs.	8
Site drains to a minor river with a low water flow between 2,000 and 4,000 cfs.	5
Site drains to a stream with a low water flow less than 2,000 cfs with no significant water supply or recreational use.	5
Site drains to a stream with low water flow less than 2,000 cfs and with significant water supply or recreational uses.	2
Site drains to a lake or wetlands.	1

Criterion Discussion:

The potential hazard to surface water quality is related to landfill runoff or collected leachate reaching surface water bodies which are used for water supply or recreation. In most cases, this potential hazard can be mitigated by leachate control and runoff/runoff protection. This is an important factor because there are specific federal and state regulations protecting surface water quality. This criterion uses stream size and existing beneficial use as a measure of the potential for impact. For this criterion, low flow is defined as the minimum monthly average flow over the last 5 years of record.

FINAL DECISION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Groundwater Discharge to Surface Water

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Site groundwater drains to a major river with low water flow greater than 4,000 cfs.	10
Site drains to a minor river with low water flow between 2,000 and 4,000 cfs.	7
Site drains to a stream with low water flow less than 2,000 cfs with no significant water supply or recreational use.	5
Site drains to a stream with low water flow less than 2,000 cfs with significant water supply or recreational use.	2
Site drains to a lake or wetlands.	1

Criterion Discussion:

Groundwater which discharges to surface streams has the potential for affecting both groundwater and surface water resources. This criterion uses stream size and use as a measure of potential impact. For this criterion, low water flow is defined as the minimum monthly average flow over the last 5 years of record. Specific hydraulic properties of the aquifers such as flow velocities are also extremely important and will be used in the final decision factors. Needed data will be collected during detailed on-site investigations.

FINAL DECISION CRITERION

Criteria Category: Environmental - Surface Water

Criterion Statement: Beneficial Use

Recommended criterion weighting (1 to 10):

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
To be added	

Criterion Discussion:

FINAL DECISION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Flow Systems

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Regional and local discharge area.	10
Local and intermediate discharge area and area of lateral (transitional) regional flow.	8
Regional and intermediate discharge/local recharge.	6
Regional recharge/local discharge.	5
Regional and local recharge area.	1

Criterion Discussion:

The proximity of landfill to the recharge/ discharge areas of an aquifer is not as significant as the aquifer's downgradient use. However, location of the landfill in the flow system offsets the ability to prevent and mitigate potential impacts. Contaminants entering a recharge area of an aquifer have a greater potential for widespread movement. Based on the site-specific data from monitoring wells, the groundwater beneath the site will be evaluated to identify where it fits into the flow system. This criterion will be modified after on-site investigations designed to evaluate the complexity of the site flow systems.

FINAL DECISION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Natural Protection

Recommended criterion
weighting (1 to 10): 8

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Thick sequence (20 feet or greater) of uniform unfractured low permeability (10^{-6} cm/sec or less) material between bottom of landfill and the regional groundwater table.	10
Thick sequence (40 feet or greater) of moderately permeable (10^{-6} to 10^{-4} cm/sec) material between landfill and the regional groundwater table.	7
Between 10 and 20 feet of uniform unfractured low permeability material between bottom of landfill and the regional groundwater table.	6
Between 10 and 40 feet of moderately permeable material between the landfill and regional water table.	3
Less than the amount of material stated above or highly permeable material (coarse-grained sediments or highly fractured bedrock) extends from bottom of landfill to regional water table.	1

Criterion Discussion:

Subsurface materials of fine-textured soil provide natural protection of the groundwater by slowing the rate of movement of contaminants and by removal of contaminants by filtering and chemical attenuation. On-site test drilling and geotechnical analysis must be used to determine thickness and nature of subsurface material.

FINAL DECISION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Aquifer Characteristics

Recommended criterion
weighting (1 to 10): 8

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Unconsolidated fine-grained sediments with high clay content or low permeability bedrock (less than 10^{-6} cm/sec).	10
Unconsolidated coarse to fine sediments or moderately permeable bedrock (10^{-6} to 10^{-4} cm/sec).	5
Coarse-grained, clean, unconsolidated sediments or permeable highly fractured bedrock.	1

Criterion Discussion:

Coarse-grained, high permeability aquifers in unconsolidated sediments are the most easily impacted and the potential for off-site contaminant migration is high. Groundwater movement in fine-textured sediments and low permeability bedrock aquifers is typically quite slow, and the potential for negative impacts as a result of off-site migration is less. Groundwater flow patterns in fractured bedrock material can be difficult to predict, monitor, and control if mitigation is required. This criterion recognizes the potential for future development of the aquifer. Aquifer characteristics such as transmissivity, storage coefficient, and hydraulic gradient must be determined from on-site aquifer tests.

FINAL DECISION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Depth to Groundwater and Natural Protection

Recommended criterion weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Deeper than 50 feet with good natural protection.	10
25 to 50 feet with good to moderate natural protection.	7
Shallower than 25 feet with moderate natural protection.	2
No natural protection regardless of depth.	1

Criterion Discussion:

The interrelationship between available natural protection (relatively impermeable sediments which restrict downward flow of water) and the depth to groundwater is an important factor. Shallow groundwater without good natural soil barriers affords little protection or attenuation, while deep groundwater with a good soil barrier provides good protection and contaminant removal. Seasonal fluctuations in groundwater level must also be evaluated; the above described depths are estimated from the average seasonal high water level to the base of any liner or leachate collection system. Depth to groundwater will be determined by on-site boreholes and monitoring wells.

FINAL DECISION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Hydrologic Boundaries

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Hydrologic boundaries well defined and local flow system encompassed by site boundaries.	10
Hydrologic boundaries identified, but none located on or adjacent to site.	5
Hydrologic boundaries poorly defined, no boundaries located on or adjacent to site.	1

Criterion Discussion:

Hydrologic boundaries, such as streams, rivers, surface and water table drainage dividers and ditches which intercept groundwater flow, define the nature and extent of groundwater movement within a flow system. If these boundaries can be clearly defined, the path and extent of groundwater movement downgradient of a site can be anticipated. If a site boundary encompasses the boundaries of the local flow system over which it is situated, the prediction of potential leachate impacts and their mitigation is facilitated.

FINAL DECISION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Existing Beneficial Use

Recommended criterion
weighting (1 to 10): 10

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No wells or developed springs in the downgradient aquifer system of the site.	10
No wells or developed springs within 1 mile of the downgradient aquifer system of the site.	9
No wells or developed springs within 1/2 mile of the downgradient aquifer system of the site.	7
No wells or developed springs within 1/4 mile of the downgradient aquifer system of the site.	4
Numerous wells or developed springs adjacent to the site.	1

Criterion Discussion:

Proximity of wells and/or developed springs is a measure of groundwater availability and use. Also, there could be wells close to the site that could be producing from an aquifer which is hydraulically separate from the site (for example alluvial aquifers in adjacent valleys separated by an impermeable bedrock ridge). Distance to the wells is of importance primarily in terms of mitigation. The closer the wells are to the site, the more difficult it is to identify and mitigate potential affects before they reach the point of use.

FINAL DECISION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Site-Specific Groundwater Quality

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Natural groundwater quality unacceptable for any use because of high dissolved solids or other quality characteristic.	10
Some constituents exceed primary or secondary drinking water standards but could be used if no other source is available.	4
Excellent quality suitable for any use, including municipal supply.	1

Criterion Discussion:

The better the existing quality, the more extensive the mitigative measures required for protection of existing or potential beneficial use. On-site groundwater samples will be collected and analyzed in order to determine site-specific groundwater quality.

FINAL DECISION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Geologic Faults

Recommended criterion
weighting (1 to 10): 3

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No evidence of faults, topographic lineations, or other indicators of structural weakness on or adjacent to site.	10
Some topographic lineations identified on or adjacent to site, but no consistent structural patterns or fault lines.	6
Numerous well-defined lineations, distinct structural patterns or possible fault lines.	4
Apparently inactive fault or faults identified on or adjacent to site.	1

Criterion Discussion:

Active faults can threaten the integrity of environmental control systems at a landfill site. However, the presence or nature (active or inactive) of faults can be difficult to determine. Therefore, evidence of faulting or other structural weakness should be considered a negative rating factor.

FINAL DECISION CRITERION

Criteria Category: Environmental - Groundwater

Criterion Statement: Sole Source Aquifer

Recommended criterion weighting (1 to 10):

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
To be added	

Criterion Discussion:

FINAL DECISION CRITERION

Criteria Category: Environmental - Natural Habitat

Criterion Statement: Protection of Rare or Endangered Species

Recommended criterion
weighting (1 to 10): 8

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No rare or endangered species present or impacted.	10
Presence of or impacts to rare or endangered species but not unique or critical habitat. Mitigation possible.	5
Presence of or impacts to rare or endangered species but not unique or critical habitat. No mitigation possible.	1

Criterion Discussion:

Sites with critical habitat for rare or endangered species were eliminated by a pass/fail criterion. This site evaluation criterion recognizes that the presence of rare or endangered species may be acceptable if no critical habitats are impacted. Mitigation may be possible by purchasing and improving an adjacent disturbed parcel of land.

FINAL DECISION CRITERION

Criteria Category: Environmental - Natural Habitat
 Criterion Statement: Protection of Terrestrial Habitat of
 Species Not Rare or Endangered

Recommended criterion
 weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Areas of low revegetation potential, low fertility, and low wildlife productivity.	10
No unique species of sport, spectator, commercial, or educational value present.	7
Presence of unique species of sport, spectator, commercial, or educational value but not critical habitat. Habitat disturbance can be mitigated.	4
Critical habitat for unique species of sport, spectator, commercial, or educational value. Habitat disturbance cannot be mitigated.	1

Criterion Discussion:

This criterion rates the terrestrial habitat with regard to presence of unique species of local interest which are not on the rare or endangered list. Ratings are with respect to the degree to which habitat would be impacted and the extent to which it could be enhanced, replaced, or protected in other areas as mitigation for its disturbance on the landfill site.

FINAL DECISION CRITERION

Criteria Category: Environmental - Natural Habitat

Criterion Statement: Habitat Disturbance

Recommended criterion
weighting (1 to 10): 2

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Area currently disturbed.	10
Previously disturbed and not reestablished in original, but in new wild environment.	7
Previously disturbed but reestablished original environment.	3
Previously undisturbed - natural state such as old growth trees.	1

Criterion Discussion:

This criterion recognizes the importance of preserving natural undisturbed habitat. The second and third range of acceptability distinguish between the habitat which has developed on a site after a previous disturbance. More important is placed on the site with its original natural habitat.

FINAL DECISION CRITERION

Criteria Category: Environmental - Natural Habitat
 Criterion Statement: Protection of Aquatic Habitat of
 Species Not Rare or Endangered

Recommended criterion
 weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Surface drainage or groundwater discharge to stream with low water flow greater than 4,000 cfs.	10
Surface drainage or groundwater discharge to stream with low water flow between 2,000 and 4,000 cfs.	5
Drainage of surface or groundwater to streams of low water flow less than 2,000 cfs without identified resident or anadromous sport fisheries.	5
Drainage of surface or groundwater to lakes, wetlands, or to streams of low water flow less than 2,000 cfs with identified resident or anadromous sport fisheries.	1

Criterion Discussion:

This criterion uses stream flow to measure the potential for impact on aquatic habitat from an assumed constant landfill source. Other environmental characteristics which attenuate or promote travel of potential contaminants from a landfill to a surface water body are addressed in the environmental subcategory on surface water. Low water flow for this criterion is defined as the minimum monthly average flow over the last 5 years of record. The U.S. Fish and Wildlife Service is currently classifying all named streams in the state with regard to their habitat value. This work is sponsored by the Bonneville Power Administration and when complete, classifications should be incorporated into this criterion.

FINAL DECISION CRITERION

Criteria Category: Environmental - Land Use

Criterion Statement: Zoning

Recommended criterion
weighting (1 to 10): 7

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Forest with Cubic Foot Site Class IV or higher or heavy industrial.	10
Forest with Cubic Foot Site Class III or EFU zone with Class III or IV soils.	8
EFU zone with Class I or II soils, Forest with Cubic Foot Site Class I and II, light industrial, residential greater than one-half acre per dwelling unit. Industrial or low density residential/commercial.	6
Residential less than one acre per dwelling unit, or commercial in urban framework designated area.	2

Criterion Discussion:

Cubic Foot Site Class designation is that applied to the dominant commercial tree species of the site. Unranked soils should be given the top score. Zoning of the site and adjacent areas may play a significant role in determining the potential future uses of the landfill.

FINAL DECISION CRITERION

Criteria Category: Environmental - Land Use

Criterion Statement: Current Site Use

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Inactive quarry, open pit mines, or other major land disturbance.	10
Disturbed open land, pasture.	8
Non-commercially managed forest land.	4
Agricultural crops production and forest lands commercially managed.	3
SCS Agricultural Class I and II Soils (outside the Urban Growth Boundary).	2
Residential, commercial, industrial.	1

Criterion Discussion:

This criterion rates the value of the land as a commercial resource. This criterion may conflict with natural habitat criteria and is therefore weighted less than the criterion on rare and endangered species, but slightly greater than the criterion covering habitat for other important natural species. This criteria also recognizes the opportunity to eliminate existing unaesthetic land conditions such as inactive quarries or open pit mines.

FINAL DECISION CRITERION

Criteria Category: Environmental - Land Use

Criterion Statement: Adjacent Land Use

Recommended criterion
weighting (1 to 10): 8

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Vacant land, pasture land, or major disturbed lands.	10
Forest or heavy industrial.	8
Light industrial or agricultural.	6
Residential or commercial.	2

Criterion Discussion:

This criterion weights the potential for impact to neighboring uses. Adjacent land uses may play a significant role in determining the potential future uses of the landfill.

FINAL DECISION CRITERION

Criteria Category: Environmental - Air Quality

Criterion Statement: Air Quality Standards

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Class III attainment area.	10
Class III nonattainment area.	7
Class II attainment area.	6
Class II nonattainment area.	4
Class I attainment area.	2
Class I nonattainment area.	1

Criterion Discussion:

A map of the area air shed should be evaluated. Sites located in noncritical areas minimize potential air pollution impacts from truck traffic, dust, and odor and are preferred.

FINAL DECISION CRITERION

Criteria Category: Environmental - Social/Cultural

Criterion Statement: Cultural, Historic, or Archaeological Resources

Recommended criterion weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No evidence of resources found on site.	10
Evidence of resources found but of little significance--not unique.	8
Significant resources found. Site excavation uncovered resources which can be protected or removed.	7
Significant resources found. Site excavation uncovered resources which would be destroyed.	1

Criterion Discussion:

If significant resources are found on a surface reconnaissance, site excavation will be required during final site evaluation. Resources uncovered will be protected or removed where possible. Sites included on the national or state registers of culturally or historically important sites will be eliminated by a pass/fail site identification criterion.

FINAL DECISION CRITERION

Criteria Category: Environmental - Aesthetic

Criterion Statement: Natural Screening

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Currently not visible from any existing homes or county roads within one mile of site.	10
Visible to up to 10 existing homes and/or clearly visible from county roads within one mile of site.	5
Visible to 10 to 20 existing homes and/or state highways within 1 mile of site.	3
Visible to more than 20 homes within 1 mile or a state highway within 1/4 mile of site.	1

Criterion Discussion:

This criterion recognizes the natural characteristics of the site which assist in screening the landfill operations from the view of neighboring residences and highways.

FINAL DECISION CRITERION

Criteria Category: Environmental - Aesthetic
 Criterion Statement: Unique Visual Environments

Recommended criterion
 weighting (1 to 10): 2

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Site Visual Quality Classification	
Rehabilitation	10
Modification	7
Partial Retention	3
Retention	2
Preservation	1

Criterion Discussion:

Bureau of Land Management and the U.S. Forest Service visual resource management systems will be used to classify viewsheds. Where classifications are not established, the objectives of the visual resources management system will be used to extrapolate a classification from maps and aerial photos.

FINAL DECISION CRITERION

Criteria Category: Environmental - Aesthetic

Criterion Statement: Buffer Area

Recommended criterion
weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
No dwelling within 3,000 feet.	10
No dwelling within 2,000 feet.	8
0 to 5 dwellings within 2,000 feet.	7
6 to 20 dwellings within 2,000 feet.	3
More than 20 dwellings within 2,000 feet.	1

Criterion Discussion:

This criterion recognizes the importance of distance as a natural mitigation measure for potential noise, dust, odor, and visual impacts. The ratings of this criterion also recognize the ability to mitigate these aesthetic impacts by purchasing a few houses which could otherwise be severely impacted, by virtue of being closer than 2,000 feet from the site. Having 5 or more dwellings within 1,000 feet of the active landfill site is a pass/fail criterion. The weighting or rating of this alternative will be reviewed during final site evaluation to account for mitigative measures which can be taken during design.

FINAL DECISION CRITERION

Criteria Category: Environmental - Aesthetic

Criterion Statement: Access Routes

Recommended criterion
weighting (1 to 10): 5

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
All truck access through non-residential or very low density uses.	10
Access available between state or federal highway and the site through low to medium density development.	5
Access available between state or federal highway and site through high density development.	1

Criterion Discussion:

This criterion recognizes the environmental impact caused by traffic related to the landfill operations. Noise, safety, dust, and litter along access are potential impacts.

FINAL DECISION CRITERION

Criteria Category: Technical
 Criterion Statement: Site Capacity

Recommended criterion
 weighting (1 to 10): 8

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Projected site life greater than 40 years.	10
Site life between 30 and 40 years.	8
Site life between 25 and 30 years.	6
Site life between 20 and 25 years.	4
Site life between 15 and 20 years.	2

Criterion Discussion:

A landfill with a long life is desirable because the cost of site identification, development, and closure are high. Sites with a projected life less than 15 years have been eliminated by a pass/fail criterion.

FINAL DECISION CRITERION

Criteria Category: Technical

Criterion Statement: Slopes

Recommended criterion
weighting (1 to 10): 2

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Working area slopes up to 10 percent.	10
Working area slopes 10 to 15 percent.	6
Working area slopes 15 to 25 percent.	2

Criterion Discussion:

Landfill should be located in an area of gentle topography and stable slopes. Steeper slopes promote erosion, instability, and access problems. Modification of slopes by adding fill, cutting, or increasing moisture by landfill operations tends to decrease stability. Slope failure could result in ground and surface water contamination. Slopes greater than 25 percent have been eliminated by a pass/fail criterion.

FINAL DECISION CRITERION

Criteria Category: Technical
 Criterion Statement: Slope Stability

Recommended criterion
 weighting (1 to 10): 6

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Stable land form, no evidence of large scale slope failure or mass movement on or adjoining the site. Slope stability analysis not required prior to construction.	10
Inactive landslide topography--no evidence of recent movement; stability analysis required.	5
Active landslide areas--evidence of recent instability, risk of rapid mass movement, complex engineering analysis and mitigation measures required.	1

Criterion Discussion:

It is important to locate the landfill on a stable land form. Potentially unstable slopes must be investigated by both surface and subsurface techniques.

FINAL DECISION CRITERION

Criteria Category: Technical

Criterion Statement: Groundwater Monitoring

Recommended criterion
weighting (1 to 10): 4

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Shallow (less than 50 feet) groundwater with horizontal flow in one direction or upward vertical flow in a homogeneous aquifer.	10
Shallow (less than 50 feet) groundwater with horizontal flow in one direction in non-homogeneous, unconsolidated aquifer materials.	7
Moderately deep (50 to 100 feet) groundwater with complex flow patterns in unconsolidated aquifer materials.	4
Deep groundwater (greater than 100 feet) with complex flow patterns in unconsolidated aquifer materials.	3
Groundwater flow through joints, fractures, or other structural features in a bedrock aquifer.	1

Criterion Discussion:

Monitoring is an important operational consideration, because complex monitoring systems are costly to construct, maintain, and operate. Monitoring becomes more difficult with increasing depth or aquifer complexity. In addition, aquifer complexity increases the problems associated with contaminant migration prediction and mitigation.

FINAL DECISION CRITERION

Criteria Category: Technical

Criterion Statement: Climatic Factors

Recommended criterion
weighting (1 to 10): 2

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Mean average temperature and precipitation and no identified wind corridor.	10
Higher than average precipitation.	5
High winds and frequent freezing rains or snow.	1

Criterion Discussion:

Climatic extremes impact the site operation. High rainfall increases leachate volumes and makes soil difficult to work. High winds blow solid waste and contribute to visual impacts. Snow and ice create hazards for transport trucks.

FINAL DECISION CRITERION

Criteria Category: Technical

Criterion Statement: Compatibility with Resource Recovery

Recommended criterion
weighting (1 to 10): 3

Ranges of Acceptability

Description	Recommended Rating (1 to 10)
Is highly compatible with a resource recovery facility.	10
Is moderately compatible with resource recovery facility.	5
Not compatible with a resource recovery facility.	1

Criterion Discussion:

Factors important in siting a resource recovery facility include quality of the airshed, availability of water supply and wastewater treatment facilities, availability of energy markets, land area, and potential aesthetic impacts. These factors will be weighed for the final sites and an overall compatibility rating determined.

FINAL DECISION CRITERION

Criteria Category: Economic

Criterion Statement: Present Worth Cost

Recommended criterion
weighting (See note): 40

Criteria Discussion:

Present worth costs will include all costs associated with the purchase, construction, and operation of the landfill site. In addition to cost items not previously discussed, the present worth cost will include costs for features addressed in specific qualitative technical and economic site evaluation criteria. These criteria become purely economic considerations during the final decision process, since preliminary designs will determine the extent and therefore cost of each item. Site evaluation criteria which fall into this category and therefore show up under present worth cost, rather than as specific final decision factors, include the following:

1. Gas control measures.
2. Surface drainage control measures.
3. Subsurface drainage control measures.
4. Leachate handling.
5. Distance to and cost of imported soils.
6. Distance from solid waste sources.
7. Site access road construction.
8. Mitigation costs for a wide variety of environmental impacts.

Note: The cost criterion is rated higher than the typical range of 10, because it represents an accumulation of a large number of factors rated as separate criteria during site evaluation. Many of these factors are described above. The overall weight of the cost of the system in relation to the other categories must be given careful consideration prior to final site selection. In the final selection it may be found that remaining sites are very comparable in cost and therefore would all be rated the same.

Enrolled
Senate Bill 662

Sponsored by COMMITTEE ON GOVERNMENT OPERATIONS AND ELECTIONS (at the request of Representative Mike Burton)

CHAPTER 679

AN ACT

Relating to solid waste disposal; appropriating money; and declaring an emergency.

Be It Enacted by the People of the State of Oregon:

SECTION 1. Sections 2 to 9 of this Act are added to and made a part of ORS 459.005 to 459.285.

SECTION 2. (1) The Legislative Assembly finds that the siting and establishment of a disposal site for the disposal of solid waste within or for Clackamas, Multnomah and Washington Counties is necessary to protect the health, safety and welfare of the residents of those counties.

(2) It is the intent of the Legislative Assembly that the Environmental Quality Commission and Department of Environmental Quality, in locating and establishing a disposal site within Clackamas, Multnomah and Washington Counties give due consideration to:

(a) Except as provided in subsections (3) and (4) of section 5 of this 1985 Act, the state-wide planning goals adopted under ORS 197.005 to 197.450 and the acknowledged comprehensive plans and land use regulations of affected counties.

(b) Information received during consultation with local governments.

(c) Information received from public comment and hearings.

(d) Any other factors the commission or department considers relevant.

SECTION 3. (1) The Department of Environmental Quality shall conduct a study, including a survey of possible and appropriate sites, to determine the preferred and appropriate disposal sites for disposal of solid waste within or for Clackamas, Multnomah and Washington Counties.

(2) The study required under this section shall be completed not later than July 1, 1986. Upon completion of the study, the department shall recommend to the commission preferred locations for disposal sites within or for Clackamas, Multnomah and Washington Counties. The department may recommend a location for a disposal site that is outside those three counties, but only if the city or county that has jurisdiction over the site approves the site and the method of solid waste disposal recommended for the site. The recommendation of preferred locations for disposal sites under this subsection shall be made not later than January 1, 1987.

SECTION 4. (1) Subject to subsections (3) and (4) of section 5 of this 1985 Act, the Environmental Quality Commission may locate and order the establishment of a disposal site under this 1985 Act in any area, including an area of forest land designated for protection under the state-wide planning goals, in which the commission finds that the following conditions exist:

(a) The disposal site will comply with applicable state statutes, rules of the commission and applicable federal regulations;

(b) The size of the disposal site is sufficiently large to allow buffering for mitigation of any adverse effects by natural or artificial barriers;

(c) Projected traffic will not significantly contribute to dangerous intersections or traffic congestion, considering road design capacities, existing and projected traffic counts, speed limits and number of turning points:

(d) Facilities necessary to serve the disposal site can be available or planned for the area; and

(e) The proposed disposal site is designed and operated to the extent practicable so as to mitigate conflicts with surrounding uses. Such conflicts with surrounding uses may include, but are not limited to:

(A) Visual appearance, including lighting and surrounding property.

(B) Site screening.

(C) Odors.

(D) Safety and security risks.

(E) Noise levels.

(F) Dust and other air pollution.

(G) Bird and vector problems.

(H) Damage to fish and wildlife habitats.

(2) When appropriate, the conditions listed in this section may be satisfied by a written agreement between the Department of Environmental Quality and the appropriate government agency under which the agency agrees to provide facilities as necessary to prevent impermissible conflict with surrounding uses. If such an agreement is relied on to satisfy any approval criteria, a condition shall be imposed to guarantee the performance of the actions specified.

SECTION 5. (1) The commission, not later than July 1, 1987, shall issue an order directing the Department of Environmental Quality to establish a disposal site under this 1985 Act within Clackamas, Multnomah or Washington County or, subject to subsection (2) of section 3 of this 1985 Act, within another county.

(2) In selecting a disposal site under this section, the commission shall review the study conducted under section 3 of this 1985 Act and the locations for disposal sites recommended by the department under section 3 of this 1985 Act.

(3)(a) When findings are issued by the department under subsection (4) of this section, the commission in selecting a disposal site under this 1985 Act must comply with the state-wide planning goals adopted under ORS 197.005 to 197.430 and with the acknowledged comprehensive plan and land use regulations of the local government unit with jurisdiction over the area in which the disposal site is located.

(b) However, when findings are not issued under subsection (4) of this section, the standards established by section 4 of this 1985 Act take precedence over provisions in the comprehensive plan or land use regulations of the affected local government unit, and the commission may select a disposal site in accordance with those standards instead of, and without regard to, any provisions for locating and establishing disposal sites that are contained in the comprehensive plan or land use regulations of the affected local government unit. Any provision in a comprehensive plan or land use regulation that prevents the location and establishment of a disposal site that can be located and established under the standards set forth in section 4 of this 1985 Act shall not apply to the selection of a disposal site under this 1985 Act.

(4) The department, not later than July 1, 1986, may determine whether the acknowledged comprehensive plans and land use regulations of the counties in which possible disposal sites being considered by the department are situated contain standards for determining the location of land disposal sites that are identical to or consistent with the standards specified in section 4 of this 1985 Act. If the standards contained in the comprehensive plan and land use regulations of a county are identical to or consistent with the standards specified in section 4 of this 1985 Act, the department may issue written findings to that effect and shall submit the findings to the commission.

(5) When selecting a disposal site under this 1985 Act, the commission may attach limitations or conditions to the development, operation or maintenance of the disposal site, including but not limited to, setbacks, screening and landscaping, off-street parking and loading, access, performance bonds, noise or illumination controls, structure height and location limits, construction standards and periods of operation.

(6) If the Environmental Quality Commission directs the Department of Environmental Quality to establish or complete the establishment of a disposal site under this section, the department shall establish the site subject only to the approval of the commission. Notwithstanding any other provision of this 1985 Act or any city, county or other local government charter or ordinance to the contrary, the Department of Environmental Quality may establish a disposal site under this section without obtaining any license, permit, franchise or other form of approval from a local government unit.

(7) The department shall identify conflicts with surrounding uses for any disposal site established under this 1985 Act and, to the extent practicable, shall mitigate or require the operator of the site to mitigate those conflicts.

SECTION 6. (1) Notwithstanding ORS 183.400, 183.482, 183.484 and 197.825, exclusive jurisdiction for review of any decision made by the Environmental Quality Commission under this 1985 Act relating to the establishment or siting of a disposal site, any order to the Department of Environmental Quality to establish or complete such a site or any findings made by the department under section 5 of this 1985 Act is conferred upon the Supreme Court.

(2) Proceedings for review shall be instituted when any person adversely affected or aggrieved by the order of the commission files a petition with the Supreme Court. The petition shall be filed within 30 days following the date on which the order upon which the petition is based is served. The petition shall state the nature of the order or decision the petitioner desires reviewed and shall, by supporting affidavit, state the facts showing how the petitioner is adversely affected or aggrieved. Copies of the petition shall be served by registered or certified mail upon the commission. Within 30 days after service of the petition, the commission shall transmit to the Supreme Court the original or a certified copy of the entire record of the proceeding under review. Review under this section shall be confined to the record, and the court shall not substitute its judgment for that of the commission as to any issue of fact or agency discretion. Upon review, the Supreme Court may affirm, reverse or remand the order of the commission if the court finds that the order is not supported by substantial evidence in the record or is unconstitutional. Proceedings for review under this section shall be given priority over all other matters before the Supreme Court.

(3) Notwithstanding ORS 197.850, jurisdiction for judicial review of a final order of the Land Use Board of Appeals issued in any proceeding arising under this 1985 Act is conferred upon the Supreme Court. The procedure for judicial review of a final order under this subsection shall be as provided in subsection (2) of this section.

SECTION 7. (1) Subject to policy direction by the commission in carrying out sections 3 and 5 of this 1985 Act, the department may:

(a) By mutual agreement, return all or part of the responsibility for development of the site to a local government unit, or contract with a local government unit to establish the site.

(b) To the extent necessary, acquire by purchase, gift, grant or exercise of the power of eminent domain, real and personal property or any interest therein, including the property of public corporations or local government.

(c) Lease and dispose of real or personal property.

(d) At reasonable times and after reasonable notice, enter upon land to perform necessary surveys or tests.

(e) Acquire, modify, expand or build landfill or resource recovery site facilities.

(f) Subject to any limitations in ORS 468.195 to 468.260, use money from the Pollution Control Fund created in ORS 468.215 for the purposes of carrying out section 5 of this 1985 Act.

(g) Enter into contracts or other agreements with any local government unit or private person for the purposes stated in ORS 459.065 (1).

(h) Accept gifts, donations or contributions from any source to carry out the provisions of sections 3 and 5 of this 1985 Act.

(i) Establish a system of fees or user charges to reimburse the department for costs incurred under this 1985 Act and to allow repayment of moneys borrowed from the Pollution Control Fund.

(2) The metropolitan service district shall have the responsibility for the operation of the disposal sites established under this 1985 Act.

SECTION 8. (1) The metropolitan service district organized under ORS chapter 263 shall prepare a solid waste reduction program. Such program shall provide for:

(a) A commitment by the district to substantially reduce the volume of solid waste that would otherwise be disposed of in land disposal sites through techniques including, but not limited to, rate structures, source reduction, recycling, reuse and resource recovery;

(b) A timetable for implementing each portion of the solid waste reduction program;

(c) Energy efficient, cost-effective approaches for solid waste reduction that are legally, technically and economically feasible and that carry out the public policy described in ORS 459.015 (2); and

(d) Procedures commensurate with the type and volume of solid waste generated within the district.

(2) Not later than January 1, 1986, the metropolitan service district shall submit its solid waste reduction program to the Environmental Quality Commission for review and approval. The commission shall approve the program if the commission finds that:

(a) The proposed program presents effective and appropriate methods for reducing dependence on land disposal sites for disposal of solid wastes;

(b) The proposed program will substantially reduce the amount of solid waste that must be disposed of in land disposal sites;

(c) At least a part of the proposed program can be implemented immediately; and

(d) The proposed program is legally, technically and economically feasible under current conditions.

(3) After review of the solid waste reduction program, if the commission does not approve the program as submitted, the commission shall allow the metropolitan service district not more than 90 days in which to modify the program to meet the commission's objections.

(4) Notwithstanding ORS 268.310 (2) and 268.317, if the commission does not approve the solid waste reduction program submitted by the metropolitan service district after any period allowed for modification under subsection (3) of this section, all the duties, functions and powers of the metropolitan service district relating to solid waste disposal are imposed upon, transferred to and vested in the Department of Environmental Quality and no part of such duties, functions and powers shall remain in the metropolitan service district. The transfer of duties, functions and powers to the department under this section shall take effect on July 1, 1986. Notwithstanding such transfer of duties, functions and powers, the lawfully adopted ordinances and other rules of the district in effect on July 1, 1986, shall continue in effect until lawfully superseded or repealed by rules of the commission.

(5) If the solid waste reduction program is approved by the commission, a copy of the program shall be submitted to the Sixty-fourth Legislative Assembly not later than February 1, 1987.

SECTION 9. (1) The metropolitan service district shall apportion an amount of the service or user charges collected for solid waste disposal at each general purpose landfill within or for the district and dedicate and use the moneys obtained for rehabilitation and enhancement of the area in and around the landfill from which the fees have been collected. That portion of the service and user charges set aside by the district for the purposes of this subsection shall be 50 cents for each ton of solid waste.

(2) The metropolitan service district, commencing on the effective date of this 1985 Act, shall apportion an amount of the service or user charges collected for solid waste disposal and shall transfer the moneys obtained to the Department of Environmental Quality. That portion of the service and user charges set aside by the district for the purposes of this subsection shall be \$1 for each ton of solid waste. Moneys transferred to the department under this section shall be paid into the Land Disposal Mitigation Account in the General Fund of the State Treasury, which is hereby established. All moneys in the account are continuously appropriated to the department and shall be used for carrying out the department's functions and duties under this 1985 Act. The department shall keep a record of all moneys deposited in the account. The record shall indicate by cumulative accounts the source from which the moneys are derived and the individual activity or program against which each withdrawal is charged. Apportionment of moneys under this subsection shall cease when the department is reimbursed for all costs incurred by it under this 1985 Act.

(3) The metropolitan service district shall adjust the amount of the service and user charges collected by the district for solid waste disposal to reflect the loss of those duties and functions relating to solid waste disposal that are transferred to the commission and department under this 1985 Act. Moneys no longer necessary for such duties and functions shall be expended to implement the solid waste reduction program submitted under section 8 of this 1985 Act. The metropolitan service district shall submit a statement of proposed adjustments and changes in expenditures under this subsection to the department for review.

SECTION 10. ORS 459.049 does not apply to a disposal site established under this Act other than for the purposes of ORS 215.213 (1)(i).

SECTION 11. This Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Act takes effect on its passage.

Passed by Senate June 3, 1985

Repassed by Senate June 18, 1985

Maribel Casmus
.....
Secretary of Senate

[Signature]
.....
President of Senate

Received by Governor:

..... 11:05 A.M. July 11, 1985

Approved: 8:59 A.M. 7-13 1985

[Signature]
.....
Governor

Filed in Office of Secretary of State:

..... 9:30 A.M. 7-15 1985

Passed by House June 17, 1985

Vera Katz
.....
Speaker of House

[Signature]
.....
Deputy Secretary of State

PROJECT TEAM

Brown and Caldwell's project team included professionals from four firms, and technical and administrative staff assisted as needed during the course of the project. The principal participants on the team are listed below.

Walter J. Meyer, Principal-in-Charge--Mr. Meyer who has a B.S. degree in Civil Engineering, is a managing engineer at Brown and Caldwell. He has 16 years of professional experience in environmental assessments, siting studies, and environmental engineering.

Steven J. Krugel, Project Manager--Mr. Krugel, a chief engineer at Brown and Caldwell, has a B.S. degree in Industrial Engineering and an M.S. degree in Sanitary Engineering. His professional experience has focused on sludge management and waste disposal, which have required extensive participation in siting analyses and public participation programs.

Hilary M. Theisen--Mr. Theisen, a managing engineer at Brown and Caldwell, has a B.S. degree in Civil Engineering and an M.B.A. degree in Business Administration. He has 25 years of experience in landfill site development, procurement, design, and operation. For this project, he helped develop site selection criteria and served as project adviser.

Albert A. Doyle--Mr. Doyle, who has a B.C.E. degree in Civil Engineering, is a managing engineer at Brown and Caldwell with 20 years of professional experience. He is the firm's recognized authority in siting studies, land use planning, and land development environmental impact and feasibility studies.

Thomas F. Hastings--Mr. Hastings, of Brown and Caldwell, has a B.A. degree in Liberal Arts and an M.S. degree in Regional Resources Planning. He has extensive experience in siting criteria development, environmental assessment, and public awareness programs. Mr. Hastings manages water resource, land use, facility siting, environmental, and economic investigations for the firm's Denver office.

William E. Clister--Mr. Clister, a geologist and geohydrologist at Brown and Caldwell, has a B.S. degree in Geology and an M.S. degree in Geohydrology. He has 16 years of experience in working with disposal and containment sites, most of which have been sanitary landfills, in the United States and Canada.

Thomas K. Wheeler--Mr. Wheeler, a geologist and geohydrologist, has a B.S. degree in Geology, with graduate studies in Hydrogeology. He works in Brown and Caldwell's Hazardous Materials Management Department and specializes in planning and implementing hazardous materials investigations. He has 13 years of experience in groundwater evaluations and is a registered geologist in Oregon.

Dean E. Ryden--Mr. Ryden, a principal engineer at Converse Consultants, has B.S. and M.S. degrees in Civil Engineering. He is a geotechnical engineer with particular expertise in earthwork construction. Mr. Ryden has 15 years of experience in evaluation of materials and sites, the suitability of various cover materials and liners, the possibility of off-site migration of methane, the necessity of leachate containment, and the existence of geologic hazards.

Mark E. Shaffer--Mr. Shaffer, a senior geological engineer at Converse Consultants, has a Gp.E. degree in Geophysical Engineering, and an M.S. degree in Geological Engineering, with additional graduate studies in Civil Engineering. He has 17 years of professional experience, much of it in the Pacific Northwest, in conducting geohydrologic investigations for municipal waste disposal, seismic hazard evaluations, geologic explorations, and groundwater supply investigations. He testifies frequently in legal proceedings and public hearings.

Herbert G. Schlicker--Mr. Schlicker, president of H. G. Schlicker and Associates, is a geologist with over 30 years of experience with Oregon geology. For 24 years he was an engineering geologist for the Oregon Department of Geology and Mineral Industries. Mr. Schlicker who has a B.S. degree in Geology and an M.S. degree in Stratigraphy, is author and coauthor of over 35 geologic publications.



Northwest Environmental Defense Center

10015 S.W. Terwilliger Blvd., Portland, Oregon 97219
(503) 244-1181 ext.707

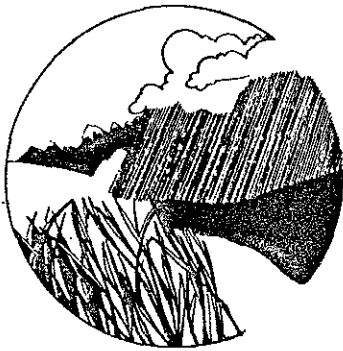
March 14, 1986

Environmental Quality Commission
522 S.W. Fifth Avenue
Portland, Oregon 97207

Dear Environmental Quality Commission:

NEDC does not believe that the proposed chlorophyll a standard is in compliance with Section 303 of the Clean Water Act for the following reasons:

- (1) A water quality standard prescribes the maximum amount of pollutants which should be present. Scott v. Hammond, Indiana 741 F.2d 992, 994 (1984). The chlorophyll a standard does not do this.
- (2) Standards should be written to prevent anticipated violations of water quality. EDF v. Costle 657 F.2d 275, 295 (1981). The chlorophyll a standard does not do this.
- (3) The State must develop TMDL's for those waters within its boundaries where water quality standards will not be achieved by technology-based limitations. 33 U.S.C. 1313(d)(1). See Scott v. Hammond, Indiana 741 F.2d 992, 996 (1984). The chlorophyll a does not require this.
- (4) The standard must enhance the quality of water and serve the purposes of the Clean Water Act. 33 U.S.C. 1313(c)(2). These purposes include a mandate "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. 1251(a). The chlorophyll a standard does not do this.
- (5) Section 1313 is replete with time limitations for establishing nutrient standards and TMDLs. Originally states were required to submit TMDLs for EPA approval within 180 days after publication of pollutants under section 304(a)(2)(D). 33 U.S.C. 1313(d)(2). More significant is the 30 day requirement in 33 U.S.C. 1313(d)(2). The chlorophyll a standard does not comply with any of these time limitations.



Northwest Environmental Defense Center

10015 S.W. Terwilliger Blvd., Portland, Oregon 97219
(503) 244-1181 ext.707

If EQC is intent upon using the chlorophyll a standard,

NEDC suggests the following changes to 340-41-150(2):

Upon determination by the Department that the values in ORS 340-40-150 are exceeded, the Department shall:

- (a) (In accordance with a schedule approved by the Commission,) Within six months, complete (conduct such studies as are necessary to describe present water quality) studies to determine the impacts on beneficial uses; determine the probable causes of the exceedence and beneficial use impact; and develop a proposed control strategy for attaining compliance. (where technically and economically practicable) Proposed strategies shall (could) include standards for additional pollutant parameters, pollutant discharge load limitations, and other such provisions as may be appropriate.

(Where natural conditions are responsible for exceedance of the value in ORS 340-41-150 or beneficial uses are not impaired, the value in ORS 340-41-150 may be modified to an appropriate value for that water body);

- (b) Conduct necessary public hearings preliminary to adoption of a control strategy, standards or modified levels after obtaining Commission authorization;
- (c) Implement the strategy upon adoption by the Commission;

NEDC also suggests the following changes to ORS 340-41-150(3):

- (3) In cases where waters exceed the levels in ORS 340-41-150 and the necessary studies are not completed, the Department may not approve new activities or additional discharge loadings from point sources.*

*If the Commission insists on providing for new activities or additional discharge loadings from point sources, NEDC suggests the following changes:

- (3) In cases where waters exceed the levels in ORS 340-41-150 and the necessary studies are not completed, the Department may approve new activities or additional discharge loadings from point sources provided that the applicant proves that such activity or discharge will not further contribute to chlorophyll a concentrations or to beneficial use impairment.
(Delete the remaining language)



Northwest Environmental Defense Center
10015 S.W. Terwilliger Blvd., Portland, Oregon 97219
(503) 244-1181 ext.707

Thank you for your consideration. We certainly hope that a standard can be developed which preserves the integrity of Oregon's waters!

Sincerely,
Cynthia L. Mackey
Cynthia L. Mackey
NEDC Executive Director



LAKE OSWEGO CORPORATION

P.O. Box 203 Lake Oswego, Oregon 97034

March 13, 1986

Environmental Quality Commission
c/o Department of Environmental Quality
522 S.W. 5th Avenue
Portland, OR 97207

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
MAR 13 1986

Dear Commissioner:

OFFICE OF THE DIRECTOR

Re: Agenda Item No. H, March 14, 1986, EQC Meeting; Standards for
Nuisance Phytoplankton Growth

The Lake Oswego Corporation ("LOC") strongly supports the adoption of Alternative 1, as modified, in accordance with the Director's recommendation to the Commission on this matter.

Testimony at prior Commission meetings has established that there is a serious problem with nuisance phytoplankton growth in the Tualatin River and in the waters of Oswego Lake. That problem has greatly impaired a number of beneficial uses in the River and the Lake, including swimming, boating and esthetics. Consequently, LOC has advocated immediate adoption of nutrient standards that would, if exceeded, become effluent standards for point sources.

The Director's report to the Commission does not recommend the adoption of such standards. LOC feels that adoption of effluent standards for nutrients is necessary. LOC believes, however, that the standard embodied in Alternative 1, together with the Tualatin Basin study that is now in progress (especially if the study focuses on Lake rehabilitation strategies, is a positive step towards a solution of the water quality problems in the Tualatin River and Oswego Lake. The language of paragraph two (d) is particularly critical to ensure that water quality will not deteriorate unnecessarily during the study and strategy development periods. LOC therefore urges adoption of Alternative 1, as amended by Paragraph two (d), and diligent pursuit of the Tualatin Basin study.

LOC understands that the Department is now seeking federal funds for the Tualatin Basin study. If LOC can be of any assistance in the grant application process, through a letter to the Environmental Protection Agency or otherwise, please let us know.

Very truly yours,

Charles E. Schaefer
Lake Oswego Corporation

cc: Dr. George Benson *Hydro-electric Generation • Police and Water Safety Patrols*
Construction and Environmental Permits • Boat and Operator Licenses
Marine Services - Gas and Oil

Lake Corporation Headquarters 700 S.W. McVey Avenue Lake Oswego, Oregon

City of Tualatin Proposed Modifications
as Submitted by
Mark Piliiod, City Attorney
March 14, 1986

NOTE: Items in brackets should be deleted and underlined items inserted

[Nuisance] Phytoplankton Growth

340-41-150 The following values and implementation program shall be applied to lakes, reservoirs, estuaries and streams, except for ponds, and reservoirs less than 10 acres in surface area, marshes and saline lakes:

1. The following average Chlorophyll a values shall be used to identify water bodies where phytoplankton may create ~~[a nuisance] an undesirable condition~~ and may impair the recognized beneficial uses:

- a. Natural lakes which thermally stratify: 0.01 mg/l
- b. Natural Lakes which do not thermally stratify, reservoirs, rivers and estuaries: 0.015 mg/l

Average Chlorophyll a values shall be based on the following methodology (or other methods approved by the Department): a minimum of three (3) samples collected over any three consecutive months at a minimum of one representative location (e.g. above the deepest point of a lake or reservoir or at a point mid-flow of a river) from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom (the lesser of the two depths); Analytical and quality assurance methods shall be in accordance with the most recent edition of Standard Methods for the Examination of Water and Wastewater or methodology approved by the Department.

2. Upon determination by the Department that the values in OAR 340-41-150(1) are exceeded the Department shall:

- a. In accordance with a schedule approved by the Commission, conduct such studies as are necessary to describe present water quality; determine the impacts on beneficial uses; determine the probable causes of the exceedance and beneficial use impact; and develop a proposed control strategy for attaining compliance where technically and economically practicable. Proposed strategies could include standards for additional pollutant parameters, pollutant discharge load limitations, and other such provisions as may be appropriate.

Where natural conditions are responsible for exceedance of the values in OAR 340-41-150(1), or beneficial uses are not significantly impaired, the values in OAR 340-41-150(1) may be modified to an appropriate value for that water body;

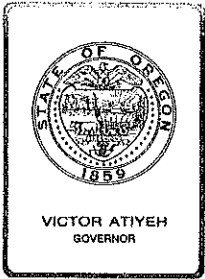
- b. Conduct necessary public hearings preliminary to adoption of a control strategy, standards or modified values after obtaining Commission authorization;

(c) Upon determination by the Commission that:

- a. the values in OAR 340-41-150(1) are exceeded.
- b. the causes of exceedance are identified.
- c. beneficial uses are thereby impaired.
- d. control strategies are technically and economically practicable.

then implement the control strategy [upon adoption by the Commission;].

3. In cases where waters exceed the values in OAR 340-41-150(1) and the necessary studies are not completed, the Department may approve new activities (which require the Department approval), new or additional (above currently approved permit limits) discharge loadings from point sources provided that it is determined that beneficial uses would not be significantly impaired by the new activity or discharge.



Environmental Quality Commission

Mailing Address: BOX 1760, PORTLAND, OR 97207

522 SOUTHWEST 5th AVENUE, PORTLAND, OR 97204 PHONE (503) 229-5696

MEMORANDUM

TO: Environmental Quality Commission DATE: March 11, 1986

FROM: Fred Hansen *Fred*

SUBJECT: Appointment of Special Hearings Officers

As a result of the number of persons who petitioned to present oral argument on findings and recommendations in the matter of the proposal to declare a Threat to Drinking Water in a specifically defined area in Mid-Multnomah County pursuant to ORS 454.275 et. seq., it was necessary to schedule 9 additional hearings on March 17, 1986 in order to give all petitioners the opportunity to present oral argument.

It is recommended that the Commission formally designate the following department staff as special hearings officers in this matter:

Mary Halliburton
Larry Patterson
Kristina Wolniakowski
Tom Lucas
Gregg Pettit
Mark Ronayne
Sherman Olson
John Jackson
Kent Ashbaker

It is further recommended that the Commission authorize the director to appoint alternate hearings officers as backup if necessary.

FH:r
DOR628

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE MEMO

TO: Fred Hansen
Mike Downs

DATE: March 12, 1986

FROM: Lorie Parker *LP*

SUBJECT: Public Comments, EQC Meeting

Bill Puntney of Clayton-Ward in Salem is planning to appear before the Commission during the public comment period on Friday. He will evidently urge the Commission to deny the Marion Wasteshed Report because the SB 405 recycling program in that wasteshed is, according to him, impinging on his recycling operation.

Mr. Puntney was the only person to testify against SB 405 when it was heard by House E & E before sending the bill to the floor. He wanted a strict grandfather clause for existing recyclers. The Committee refused to adopt his proposed amendment, but did try to compromise by requiring local governments to first give "due consideration" to existing recyclers before granting a franchise for recycling collection service.

We have received the Marion Wasteshed Report but have not begun to process it because it is not complete. By law, the Department has the authority to review and approve or disapprove recycling reports. The Commission gets involved only when a report has been disapproved and the wasteshed fails to correct the deficiencies.

SML64

CLAYTON-WARD CO.

- CORRUGATED BOXES
- SHREDED PACKAGING MATERIAL
- PAPER RECLAIMING AND RECYCLING
- CONFIDENTIAL DOCUMENT DESTRUCTION

PHONE (503) 393-8700
1620 CANDLEWOOD DR., N.E.
SALEM, OREGON 97303

March 14, 1986

Environmental Quality Commission
Portland, Oregon

I am the owner of Clayton Ward Recycling Co. I am here to ask you to direct your staff not to accept Marion County's Wasteshed report which was submitted earlier this month.

I assume that the purpose of the report is to put down on paper the actual happenings in Marion County.

I believe instead what is put down is what the DEQ wants to hear and not reality.

The reality of the situation is that the City of Salem for which the Marion wasteshed report was prepared actively and openly permits and causes the spirit and intent of SB405 to be violated. Salem purposely and deliberately causes recyclable material to be placed in a landfill. I can only assume that since Marion County knows this is going on they condone these actions.

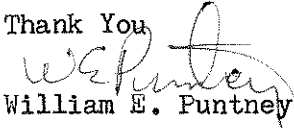
So Salem is not living up to the spirit and intent of SB405 and apparently has no intent of doing so. Salem merely wants to have the right blanks filled in on the wasteshed report and go on with business as usual.

I believe the intent of SB 405 was to get more material recycled and to keep the material out of the landfill as long as the cost of collecting and recycling is less or equal to the cost of disposing in a landfill.

Salem is not on this program now and has no intent
in being on this program.

Therefore, I ask you to send the Wasteshed report back
to Marion County and ask them to return it when whatever
area they represent is complying in all respects with the
spirit and intent of SB 405.

Thank You


William E. Puntney