

11/18/1983

OREGON

ENVIRONMENTAL QUALITY

COMMISSION MEETING

MATERIALS



State of Oregon
**Department of
Environmental
Quality**

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OREGON ENVIRONMENTAL QUALITY COMMISSION MEETING

November 18, 1983

14th Floor Conference Room
Department of Environmental Quality
522 SW Fifth Avenue
Portland, Oregon

AGENDA

9:00 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.

- APPROVED A. Minutes of October 7, 1983, EQC meeting; and of the September 23 and October 13 special conference call meetings.
- APPROVED *Memo* B. Monthly Activity Report for September, 1983.
- APPROVED C. Tax Credits.

9:05 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

- APPROVED D. Request for authorization to conduct a public hearing on modifications to water quality rules related to surety bonds for construction and operation of private sewerage facilities, OAR Chapter 340, Division 15.
- APPROVED E. Request for authorization to conduct a public hearing on the adoption of hazardous waste management rules, OAR Chapter 340, Divisions 100-125.
- APPROVED F. Request for authorization to conduct a public hearing on proposed redesignation of the Medford-Ashland AQMA as attainment for ozone and proposed revision to the State Implementation Plan.

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.

- APPROVED G. Request for a class variance for the miscellaneous products and metal parts industry from OAR 340-22-170(4)(j) which limits solvent content of coatings.

- APPROVED H. Request by Sportsman's Park Sewer Association for approval of an interim alternative security plan to meet the surety bond requirements of ORS 454.425 and OAR Chapter 340, Division 15.
- APPROVED I. Proposed adoption of amendments to motor vehicle emission control rules OAR 340-24-306, 310, 315, 320, 325, 340, and 350, affecting operating procedures, pollution control equipment inspection, the engine exchange policy, test method, and licensed fleet policy.
- ACCEPTED J. Informational report: Noise study of Jackson County's drag strip at White City.
- ACCEPTED K. Informational report: Relationships with other agencies.
- MOTION TO BAN L. Informational report: Portland area backyard burning.
- ACCEPTED M. Informational report: Ozone control strategy and VOC growth cushion for the Portland/Vancouver AQMA.
- ACCEPTED N. Informational report: Compliance status of Mt. Mazama Plywood Company of Sutherlin.

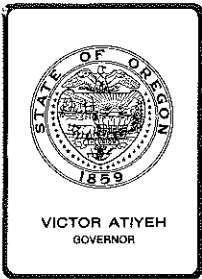
WORK SESSION

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 9:00 am to avoid missing any item of interest.

The Commission will breakfast (7:30 a.m.) at the Portland Motor Hotel, 1414 SW Sixth Avenue, Portland; and will lunch at DEQ Headquarters, 522 SW Fifth Avenue, Portland.

DOD229
EQC.AG (10/83)



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: October 28, 1983

FROM: Michael J. Downs, *MJD* Acting Director

SUBJECT: November 18, 1983 EQC Breakfast Agenda Item

Variance Log

Attached is a "Variance Log" developed at Commission request to record formal variances and related agency actions.

The use of variances is authorized by statute. Air Quality variances are authorized by ORS 468.345 which provides that the Commission may grant specific variances from the particular requirements of any rule or standard. The variances may be time-limited and restricted to specific persons or classes of persons or to specific air contamination sources. Variances are to be granted upon such conditions as the Commission may consider necessary to protect public health and welfare.

The statute further requires that the Commission grant variances only if it finds that strict compliance with a rule or standard would be inappropriate because:

- (a) Conditions exist that are beyond the control of the persons granted such variance; or
- (b) Special circumstances render strict compliance unreasonable, burdensome or impractical due to special physical conditions or cause; or
- (c) Strict compliance would result in substantial curtailment or closing down of a business, plant or operation; or
- (d) No other alternative facility or method of handling is yet available.

In determining whether a variance should be granted, the Commission is required to consider the "equities involved" and the advantages and disadvantages to residents and to the person conducting the activity for which the variance is sought.

Outstanding air quality variances are included in the variance log. Separately listed are instances of failure to meet strict rule compliance for which a negotiated compliance schedule has been placed in the company's



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air quality operating permit. Compliance deadlines are listed for each of the four plants in this category. The use of negotiated compliance schedules as an alternative to variances is guided by criteria developed to encourage uniform enforcement effort. These criteria will be the subject of a separate discussion with the Commission in the near future.

Noise variances are authorized by ORS 467.060. The Commission may grant variances from particular requirements of any noise rule or standard upon such conditions as it may consider necessary to protect the public health, safety and welfare. Noise variances may be limited in duration. The grant of noise variances is subject to the air quality variance constraints listed in (a)-(d) above.

The Commission may delegate to the Department its power to grant noise variances. In determining whether or not a noise variance shall be granted the agency must consider the "equities involved" and the advantages and disadvantages to residents and to the person conducting the activity for which the variance is sought.

Solid waste variances are authorized by ORS 459.225. If the Commission finds that a disposal site cannot meet one or more of certain statutory or rule requirements it may issue a variance or a conditional permit containing a schedule of compliance specifying the time or times permitted to bring the disposal site into compliance. Variances or conditional permits are to be issued on terms substantially identical to air and noise variances.

The water quality statutes do not specifically contemplate a variance procedure.* Currently, all water quality sources are either (1) in compliance, or (2) in an active voluntary program to achieve compliance, and/or (3) operating according to a consent order or under a permit establishing a compliance schedule. Consent orders are used to establish time schedules for construction of waste water treatment facilities. A list of these Commission approved orders is included in the log.

Not listed in this log are situations in which the variation from the rule is so slight as to be considered insignificant. Also omitted are situations in which the correction is to be undertaken so promptly that no formal action is considered necessary. Changes in this log are not expected to be frequent enough to justify its monthly production. With the Commission's approval, it is currently contemplated that the log will be produced four times a year. Between times, the Commission will be informed of any significant change.

LKZucker:j
HD230
Attachment

*The on-site subsurface waste disposal law allows permits to be issued which vary from the rules. This provision has its own technical appeal procedure. Once issued these variances merge into the granted permit and are no longer deemed exceptions.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

VARIANCE LOG

September 1983

* Source and * Permit No. *	* Location *	* Variance From * (Rule) *	* Date * Granted *	* Date * Expires *	* On * Schedule *
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AIR QUALITY

Weyerhaeuser Sawmill (18-0099)	Bly	Particulate Standards OAR 340-21-020(1) (b)	8/31/79	Permanent	
Timber Products (15-0025)	Medford	Particle Dryer Standards OAR 340-30-045(d)	12/19/80	6/30/83	(A)
Van Bean Shell Station	Salem	VOC Standards OAR 340-22-107(3) and 340-22-110(3)	7/17/81	7/1/85	Yes
Mt. Mazama Plywood (10-0022)	Sutherlin	Veneer Dryer Standards OAR 340-25-315(1) (b)	7/17/81 4/16/82 4/3/83 7/8/83	5/1/84	Yes
Coos County Garbage Incinerators (06-0099)	Beaver Hill	Particulate Standards OAR 340-21-025(2) (b)	10/9/81	Permanent	
Champion International (22-5195)	Lebanon	Veneer Dryer Standards OAR 340-25-315(1) (b)	8/19/83	9/1/84	Yes
FMC (26-2944)	Portland	VOC Standards OAR 340-22-170	10/15/82	12/31/86	Yes
Carnation Can (34-2677)	Hillsboro	VOC Standards OAR 340-22-170(4) (a) (D)	10/15/82	12/31/85	Yes

(A) Additional time granted for testing.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

VARIANCE LOG

September 1983

* Source and * Permit No. *	* Location *	* Variance From * (Rule) *	* Date * Granted *	* Date * Expires *	* On * Schedule *
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AIR QUALITY (cont.)

Champion International (14-0002)	Dee	Visible Emission Standards OAR 340-21-015(2) (b) OAR 340-21-030(2) (b)	10/15/82	1/1/84	Yes
Rancho-Rajneesh Funeral Pyre (16-0021)	Jefferson County	Opacity Standards OAR 340-21-025(b)	12/3/82	Permanent	
Diamond International (09-0001)	Bend	Fugitive Emission Standards OAR 340-21-030(2) OAR 340-21-060(1)	12/3/82	6/15/84	Yes
Oil-Dri (19-0018)	Christmas Valley	Fugitive Control Standards OAR 340-21-015(2) (b) OAR 340-21-030(2)	12/3/82	4/1/84	No ^(B)
Boeing (26-2204)	Portland	VOC Standards OAR 340-22-170(4) (j)	1/14/83	1/1/84	Yes
Winter Products (26-3033)	Portland	VOC Standards OAR 340-22-170(4) (j)	1/14/83	1/1/87	Yes
Mid-Oregon Crushing (37-0174)	Deschutes County	Particulate Opacity Standards OAR 340-21-015(2) (b) OAR 340-21-030	7/8/83	11/1/83	Yes
Kingsford Co. (20-4402)	Springfield	Particulate Emission Standards LRAPA Rules 33-065	7/8/83	9/31/83	Yes

(B) The scheduling problem has been resolved and the company is back on an acceptable schedule as of the end of October 1983.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

VARIANCE LOG

September 1983

AIR QUALITY NEGOTIATED COMPLIANCE SCHEDULES

<u>Source and Permit No.</u>	<u>Location</u>	<u>Schedule</u>
Eugene Chemical Works (22-4009)	Harrisburg	Improve odor controls by March 15, 1984.
Hyster Co. (26-3032)	Portland	Close down or comply with VOC rules by March 1, 1986.
Boise Cascade (05-1849)	St. Helens	Improve TRS controls and demonstrate compliance by October 15, 1984.
Simpson Timber (26-3009)	Portland	Comply with opacity by January 1, 1984.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

VARIANCE LOG

September 1983

* Source and * Permit No. *	* * Location *	* Variance From * (Rule) *	* Date * Granted *	* Date * Expires *	* On * Schedule *
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NOISE

Murphy Veneer	Myrtle Point	Log loader noise OAR 340-35-035	6/20/80	7/1/82	No (C)
Med Co.	Rogue River	Noise emission standards OAR 340-35-035	8/27/82	12/31/83	Yes
Jackson County Sports Park	White City	Drag race mufflers OAR 340-35-040	5/20/83	10/31/83	Yes

(C) Plant not operating at expiration date.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

VARIANCE LOG

September 1983

* Source and * Permit No. *	* Location *	* Variance From * (Rule) *	* Date * Granted *	* Date * Expires *	* On * Schedule *
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SOLID WASTE DISPOSAL SITES

Cannon Beach (23)	Clatsop County	Open Burning Standards OAR 340-61-040(2)	9/26/75	11/1/83	No (D)
Seaside (22)	Clatsop County	Opening Burning Standards OAR 340-61-040(2)	9/26/75	11/1/83	No (D)
Powers (160)	Coos County	Open Burning Standards OAR 340-61-040(2)	1/13/78	6/30/84	No (E)
Adel (4)	Lake County	Open Burning Standards OAR 340-61-040(2)	9/21/79	7/1/85	Yes
Christmas Valley (9)	Lake County	Open Burning Standards OAR 340-61-040(2)	9/21/79	7/1/85	Yes
Fort Rock (276)	Lake County	Open Burning Standards OAR 340-61-040(2)	9/21/79	7/1/85	Yes
Paisley (178)	Lake County	Open Burning Standards OAR 340-61-040(2)	9/21/79	7/1/85	Yes
Plush (10)	Lake County	Open Burning Standards OAR 340-61-040(2)	9/21/79	7/1/85	Yes

(D) County has not sited an alternate landfill. Variance will be on the EQC's October agenda.

(E) City has not located an acceptable alternative.

MAR.22 (9/83)

ME40 (4)

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

VARIANCE LOG

September 1983

* Source and * Permit No. *	* Location *	* Variance From * (Rule) *	* Date * Granted *	* Date * Expires *	* On * Schedule *
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SOLID WASTE DISPOSAL SITES (cont.)

Silver Lake (184)	Lake County	Open Burning Standards OAR 340-61-040(2)	9/21/79	7/1/85	Yes
Summer Lake (183)	Lake County	Open Burning Standards OAR 340-61-040(2)	9/21/79	7/1/85	Yes
Mitchell (175)	Wheeler County	Open Burning Standards OAR 340-61-040(2)	4/24/81	7/1/86	Yes
Butte Falls (205)	Jackson County	Open Burning Standards OAR 340-61-040(2)	7/16/82	7/1/85	Yes

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

VARIANCE LOG

September 1983

WATER QUALITY STIPULATED CONSENT ORDERS

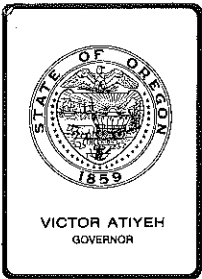
The water quality program supplements its permit program by use of stipulated consent orders establishing time schedules for construction of waste treatment facilities. The following consent orders are in force.

<u>Source and Permit No.</u>	<u>Location</u>	<u>Purpose</u>	<u>Date Granted</u>	<u>Date Expires</u>	<u>On Schedule</u>
Happy Valley	Clackamas Co.	Establish time schedule	2/17/78	None	No ^(F)
Seaside (2750-J)	Clatsop Co.	Establish time schedule	2/23/79	None	No ^(G)
Cannon Beach (3650-J)	Clatsop Co.	Establish time schedule	10/15/82	1/4/84	Yes
Coquille (3679-J)	Coos Co.	Establish time schedule	10/15/82	7/31/84	No ^(H)
Bear Creek Sanitary Authority (2990-J)	Jackson Co.	Establish time schedule	1/14/83	12/31/83	Yes
Silverton (3146-J)	Marion Co.	Establish time schedule	1/14/83	4/1/85	Yes

^(F) New schedule being negotiated.

^(G) New schedule to be put in permit.

^(H) The City of Coquille bond election for construction of a new water treatment plant failed. They are not on schedule. The Department is working with the City on alternatives.



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: November 18, 1983

FROM: Linda K. Zucker, *LKZ* Hearings Officer

SUBJECT: Division of Responsibility for Contested Cases

Change in the composition of the Commission and some recent controversial issues suggest that I confirm my understanding of the Commission's expectations of the procedure under which I handle contested cases for the Commission.

Under Oregon law, administrative review in the form of a quasi-judicial procedure, or contested case, is available to test a range of agency actions. In our agency, the Commission oversees this process. A person challenging an action taken by the Department appeals that action to the Commission to seek redress.

It is my understanding that the Commission has made a general ongoing delegation to me to administer how that agency review is provided. Within the delegation I perform necessary information gathering, analysis and decision-making subject to Commission review.

Specifically, it is agency practice for me to receive all hearings requests directed to the Commission. The requests are reported to the Commission on my monthly activity report. Then, without consultation with the Commission, I perform the range of tasks involved in management of a contested case docket. Without consultation with the Commission, I act as a "referee" between the agency and the party it regulates, making a variety of legal decisions preliminary to the actual hearing on the merits of the case. Then I conduct an evidentiary hearing after which I prepare a decision. In developing decisions I do not discuss the facts or the law with the Commission or the parties. When I mail the written decision to the parties I send a copy to each of the Commissioners. At the same time I remind the parties that, if dissatisfied with my decision, they have the right to appeal my decision to the Commission. Not only the parties but also any Commissioner can initiate review of one of my decisions by filing a timely statement of its wish to review and notifying the parties of the issues in which it is interested.



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Environmental Quality Commission

November 18, 1983

Page 2

Typically, the Commission reviews my decision for error using the evidentiary record made before me. This record can, for good cause, be supplemented by further testimony before the Commission. I do not participate in argument before the Commission to support the position I have taken in my decision. Thus, Commission review of my work is a wholly separate level of review of the agency action.

It is the usual view that administrative hearings officers function as fact finders, routinely applying the facts developed at hearing to established rules of law. The nature and volume of our rules and the nature and variety of the issues that come before our agency in its review process requires this agency's hearings officer to function more as a rule interpreter than as a rule and fact applicator. For this reason, my decisions are often the agency's first cut at articulating Commission policy. It has been agency practice that I not consult with the Commission in taking the action I deem legal and appropriate in performance of my review. If the Commission is dissatisfied with the action I take, it can remedy the particular action before it, and direct me for the future, by reversing my decision and instituting its own. Currently, this is done formally through the described two-level review process. The purpose of this memo is to initiate discussion on whether the Commission wishes to explore change in the process.

LKZ:d

HD236

THESE MINUTES ARE NOT FINAL UNTIL APPROVED BY THE EQC

MINUTES OF THE ONE HUNDRED FIFTY-SECOND MEETING

OF THE

OREGON ENVIRONMENTAL QUALITY COMMISSION

November 18, 1983

On Friday, November 18, 1983, the one hundred fifty-second meeting of the Oregon Environmental Quality Commission convened at the Department of Environmental Quality, Portland, Oregon. Present were Commission members Chairman James Petersen; Wallace Brill; Mary Bishop; and Arno Denecke. Commissioner Fred Burgess was absent. Present on behalf of the Department were its Acting Director, Michael J. Downs, 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

1. Variance log: The Commission members discussed and approved the format and schedule of the variance log.
2. Contested case procedures: The Commission is satisfied with the division of responsibility between the Commission and its Hearings Officer in dealing with contested cases.
3. Department's performance review with the Governor: Mike Downs, Acting Director, described for the Commission an upcoming review process by the Governor's office of all state agencies. DEQ expects its review to take place sometime after the first of the year. The Commission would like to be notified when the date is set.
4. Georgia-Pacific Toledo - NPDES permit renewal: Harold Sawyer, Administrator of the Water Quality Division, described the permit renewal process and will determine who from the DEQ staff will participate in any hearing.
5. Terrebonne: Rich Reiter, Manager of the Hazardous Waste Division, described for the Commission the cleanup efforts due to begin soon on an abandoned hazardous waste site in Deschutes County.
6. Mt. Mazama Plywood: The Commission decided to discuss this matter in an Executive Session after the public has had an opportunity to testify during the formal meeting.

7. Backyard burning: The Commission asked to see those questions used in a telephone poll taken recently to determine public sentiment toward backyard burning. Staff will provide copies of that poll at the beginning of the formal meeting.

FORMAL MEETING

Commissioners Petersen, Denecke, Brill, and Bishop were present at the formal meeting.

AGENDA ITEM A: Minutes of the October 7, 1983, EOC Meeting, and the September 23 and October 13, 1983, special conference call meetings.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill, and passed unanimously that the Minutes be approved.

AGENDA ITEM B: Monthly Activity Reports for September, 1983

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

AGENDA ITEM C: Tax Credits

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

PUBLIC FORUM:

Louise Weidlich spoke regarding the broadcasting on November 20 of a film, "The Day After," and the propriety of allowing the movie to be shown to such a wide audience.

AGENDA ITEM D: Request for Authorization to hold a Public Hearing on Modifications to Water Quality Rules Related to Surety Bonds for Construction and Operation of Private Sewerage Facilities, OAR 340, Division 15.

At the July Commission meeting, the Water Quality Division presented a report on problems associated with getting perpetual surety bonds for construction and operation of sewerage facilities. After studying the various alternatives, the Commission suggested that the staff evaluate the possibility of amending the rules to allow a combination of insured savings account assignment and a short-term bond. The Water Quality staff drafted a rule change and request authorization for a hearing.

Acting Director's Recommendation

It is recommended that the Commission authorize a hearing to be held on the proposed surety bond rule modifications.

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

AGENDA ITEM E: Request for Authorization to Conduct a Public Hearing on the Adoption of Hazardous Waste Management Rules, OAR Chapter 340, Divisions 100-125.

Due to a high potential for human health and environmental damage, hazardous waste requires special management controls. This need has been recognized since 1971 when the Legislature initially adopted hazardous waste legislation so that today Oregon has a comprehensive hazardous waste management program that controls hazardous waste from the time of generation through transportation, storage, treatment and disposal.

This package contains the DEQ's proposal to adopt as OAR Chapter 340, Divisions 100 to 125, a substantially more detailed set of rules for hazardous waste management than now exists. They are the culmination of a two-year rulemaking process designed to make the state program fully equivalent to and consistent with the federal RCRA. They are based on rules promulgated by EPA but have been modified to more closely serve the needs of the Oregon community.

Adoption of the rules, and subsequently obtaining Final Authorization, will enable the DEQ to be solely responsible for managing hazardous waste in Oregon. The need to keep this responsibility in local hands has been expressed by the Legislature, the regulated community, and the public.

Acting Director's Recommendation

Based upon the Summation, it is recommended that the Commission authorize a public hearing to take testimony on the proposed repeal of OAR Chapter 340, Divisions 62 and 63 and the adoption of OAR Chapter 340, Divisions 100 to 125.

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

AGENDA ITEM F: Request for Authorization to Hold a Public Hearing on Proposed Redesignation of the Medford-Ashland AQMA as Attainment for Ozone, and Proposed Revision of the State Implementation Plan.

The Medford-Ashland area has been designated as nonattainment for three air pollutants: suspended particulate, carbon monoxide, and ozone. The Medford-Ashland area has been in compliance with the ozone standard since 1979 and is expected to stay in compliance with the ozone standard in future years. This agenda item requests a public hearing to redesignate the Medford-Ashland area as attainment for ozone.

Acting Director's Recommendation

Based on the Summation, the Acting Director recommends that the Commission authorize a public hearing to consider:

1. The proposed redesignation of the Medford-Ashland AQMA as an attainment area for ozone; and

2. The proposed replacement of the ozone attainment strategy for the Medford-Ashland AQMA (Section 4.8 of the State Implementation Plan) with an ozone maintenance strategy as a revision to the State Clean Air Implementation Plan.

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

AGENDA ITEM G: Request for a Variance for the Miscellaneous Products and Metal Parts Industry From OAR 340-22-170(4)(j) Which Limits Solvent Content of Coatings.

The miscellaneous products and metal parts industry is one of the categories covered by the Department's surface coating in manufacturing rule. This rule limits solvent content of coatings used in the Portland Metropolitan area in order to reduce emissions of volatile organic compounds (VOC).

The industry cannot obtain satisfactory coating systems to meet the rule.

The Department is requesting the Commission to grant a class variance to the miscellaneous products and metal parts industry from the VOC rule until July 1, 1985, to allow the Department to include this industry in its study of alternative control strategies for VOC.

Acting Director's Recommendation

Based upon the findings in the Summation, it is recommended that the Commission grant a variance for the miscellaneous products and metal parts industry with the following conditions:

1. The requirements of OAR 340-22-170(4)(j) be waived for all affected sources until July 1, 1985.
2. The FMC and Winter Products variances remain in effect as originally granted by the Commission.
3. The Department include the miscellaneous products and metal parts industry in its alternative control strategy analysis for VOC control due to be completed by December 31, 1984.

David P. Thompson, private citizen, expressed a concern regarding solvent-based paint versus water-based paint.

Ron Graham, representing the painting industry, also spoke on this matter.

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

AGENDA ITEM H: Request by Sportsman's Park Sewer Association for Approval of an Interim Alternative Security Plan to Meet the Surety Bond Requirement of ORS 454.425 and OAR Chapter 340, Division 15.

The Sportsman's Park Sewer Association has taken over the community sewerage system serving the Sportsman's Park recreational subdivision in Wasco County.

One of the conditions of the takeover is the requirement for them to provide a performance bond or other perpetual security in the amount of \$10,500. The bonding companies are not willing to write them a perpetual surety bond so the Sewer Association is requesting that the Commission approve an alternate form of security for about a two-year period.

Acting Director's Recommendation

Based upon the Summation, it is recommended that the Commission approve the request of the Sportsman's Park Sewer Association and allow the required security to consist of an insured savings account in combination with a renewable bond.

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

AGENDA ITEM I: Proposed Adoption of Amendments to Motor Vehicle Emission Control Inspection Rules. OAR 340-24-306, 310, 315, 320, 325, 340, and 350; Affecting Operating Procedures, Pollution Equipment Inspection, the Engine Exchange Policy, Test Method, and Licensed Fleet Policy.

The Commission is asked to adopt revisions to the Motor Vehicle Emission Inspection program rules. These changes would include changes to the operating procedures and test criteria sections. A special testing provision for Ford vehicles would be eased with the 1983 model year, tampering inspections would be eased on 1970 - 1974 vehicles, and the engine change policy would be modified. The proposal also includes changes affecting the licensed fleet-testing schedule and inspector and equipment-licensing requirements.

A hearing was held October 3, 1983. There was testimony supportive of the changes on licensed fleet-testing schedules. No testimony was received against any of the proposed amendments.

Acting Director's Recommendation

Based upon the Summation, it is recommended that the proposed rule amendments listed in Attachment 3 be adopted.

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

AGENDA ITEM L: Informational Report - Portland Area Backyard Burning.

The issue of Portland-area backyard burning has been before the EQC many times. In March 1981 the EQC rescinded a burning ban on the basis it had over-estimated the ability of local government to provide alternative disposal methods.

The Department has promised to provide new recommendations for a course of action to the EQC when conditions warrant. Even though substantial progress has been made to develop recycling programs for yard debris, the Department is recommending an indefinite continuation of the spring/fall burning season.

This recommendation is being made on the basis that there appears to be a lack of support from a majority of local governments and citizens to implement any other alternative which would have direct economic impacts.

The Department will investigate the feasibility of classifying yard debris as a recyclable under SB 405. Such a classification would allow mandating curbside pickup which would make imposition of a ban a less controversial issue.

Acting Director's Recommendation

Lacking substantial support from local government and citizens of the Portland area for either a burn ban, a monetary commitment to cover segregated curbside pickup, or a burning fee system to improve recycling and existing burning practices, the Acting Director recommends that the EQC maintain the current spring/fall burning period and further that the staff continue to work with Metro and other interested parties to investigate the feasibility of a program to classify yard debris in the Portland area as a recyclable material under SB 405. The Department should also propose incorporation of present backyard burning rules in the SIP as part of the total SIP overhaul expected in the first quarter of 1984.

David P. Thompson, M.D., Marquam Medical Center, favors a ban on burning because of obvious harmful health effects.

George Feldman, M.D., favors restrictions against backyard burning on the basis of health and aesthetics.

Jeanne Roy, Yard Debris Steering Committee and former member of Open Burning Subcommittee of the Portland Air Quality Advisory Committee, contended that the EQC should reject staff recommendations and ban backyard burning.

Dockum Shaw, Hillsboro, wished to promote the idea of a burning ban.

Joe Weller, Oregon Lung Association, supports a backyard burning ban.

John Charles, OEC, suggested that the collection problem is one of local government and that the Commission has the responsibility to ban a polluting process such as backyard burning.

Mark Hope, Waste By-Products, supports a ban on backyard burning.

Sandra Gee, Southwest Portland resident, feels that citizens need some public protection from actions such as backyard burning.

Joseph A. Greulich, Tualatin Fire District, asked the Commission not to make any more changes in the rules until all burning is prohibited.

Owen P. Cramer, meteorologist, favors the Department's recommendation.

Ann Kloka, Sierra Club, represented 3,000 members in the Portland area who disagree with the staff recommendation to continue backyard burning.

Vern Lenz, spoke on burning yard debris versus recycling and favors the Department's proposed action.

Robert Smith, Northeast Portland resident, supports a complete ban on open burning in the Portland area and suggests that the Commission must protect the rights of all citizens.

Charles Schade, M.D., Multnomah County Health Officer, favors a ban on open burning and feels that not to do so will send mistaken messages to the Woodstove Advisory Committee and others who might burn.

James Marsh, Southwest Portland, favors a ban and opposes the Department's proposed action.

Eve Heidtmann, Southwest Portland, favors a ban.

Bobby Simons, Southwest Portland, urges a vote in favor of the ban in order to protect the rights of all citizens.

Amanda Jacobson, Southwest Portland, favors a ban on backyard burning.

T. Dan Bracken, Portland Air Quality Advisory Committee, urged the Commission to reject the recommendation of the Department and institute a ban on open burning.

Louise Weidlich, Neighborhood Protective Association, contended that instituting a ban of open burning in the Portland metropolitan area would violate the constitutional rights of the citizens.

It was MOVED by Commissioner Bishop to proceed toward a ban with a provision for a hardship burn permit. The motion failed for lack of a second.

It was MOVED by Commissioner Bishop, and seconded by Commissioner Denecke, that the Commission finds that it is necessary to meet air standards and that alternative methods are reasonably available and, therefore, the Department should proceed toward a ban with provisions for hardship burn permits. Commissioner Brill voted no; the motion passed.

The Department was further instructed to guide the Commission in the proper way to proceed in this matter. The Department should come back at the next meeting for authorization to conduct a public hearing.

AGENDA ITEM K: Relationships with Other Agencies.

The Commission requested a report on the Department's relationships with other agencies when a petition from the Oregon Environmental Council regarding pesticide application on Tillamook Bay oyster beds was denied. This is the second and final version of that report. An earlier report described the permit-related activities of the Department in more general terms. The Commission and the Department's authority in the water quality and solid waste programs is quite broad. The Department has attempted to outline the guidelines it uses in exercising its permitting authority.

Acting Director's Recommendation

This is an informational report. No Commission action is required. The Commission should accept the report and direct the staff to change any permit related activities they wish.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill, and passed unanimously to accept the report.

AGENDA ITEM M: Informational Report on the Ozone Control Strategy and VOC Growth Cushion for the Portland-Vancouver AQMA (Oregon Portion).

The Commission adopted an ozone control strategy for the Portland-Vancouver airshed in 1982. The ozone strategy included a growth cushion for future emissions of volatile organic compounds (VOC) from new or expanded industries. Requests for increased VOC emissions now exceed the available growth cushion. This agenda item recommends that the Commission direct the Department to develop new control measures in order to maintain a growth cushion for the Portland area.

Acting Director's Recommendation

The Acting Director recommends that the Commission direct the Department to work with Metro and the Portland Air Quality Advisory Committee to identify as expeditiously as possible the most feasible and cost-effective new VOC control measures which could be implemented to increase the VOC growth cushion in the Portland-Vancouver AQMA. A proposed revised ozone SIP would be brought back to the EQC for hearing authorization.

John Charles, OEC, spoke in support of the staff recommendation on this issue.

It was MOVED by Commissioner Bishop, seconded by Commissioner Brill, and passed unanimously to accept this report.

AGENDA ITEM J: Informational Report on Noise Study of Jackson County's Drag Strip at White City.

At the May 1983 EQC meeting, Jackson County was granted a variance from the muffler requirements for drag race vehicles operated at the Jackson County Sports Park during the 1983 racing season. As a condition of the variance, this report was prepared to provide information that was not fully available to justify a long-term variance at the time of the request. The conclusions of this report are that a continued variance is not necessary and staff does not recommend any amendments to the rule to address the specific issues at the Jackson County track.

Acting Director's Recommendation

It is recommended that the Commission accept this informational report.

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

AGENDA ITEM N: Informational Report on the Compliance Status of Mt. Mazama Plywood Company of Sutherlin.

Agenda Item N provides an update on Mt. Mazama Plywood's progress toward complying with the veneer dryer emission standards as directed by the Commission at their meeting of July 8, 1983.

Proposed Department Action

Robert Haskins, Department of Justice, expects to complete a review of the details regarding the bankruptcy action within a few days. He also hopes to meet with the company's attorney on this matter.

The Department will provide updated information regarding the Mt. Mazama Plywood Company variance at this EQC meeting. This update will include Mr. Haskins' findings, the company's financial progress, and alternatives for possible further actions on this variance.

Robert Haskins reviewed recent findings regarding funding to purchase pollution control equipment as related to the bankruptcy issue. Copies of a letter from State Senator William Frye, dated November 10, 1983, concerning this matter were made available.

Lloyd Norris, City Manager of the City of Sutherlin, told the Commission that the City is concerned about the economic effect of any curtailment of Mt. Mazama's production.

Jim Kline, Mt. Mazama Plywood, answered questions regarding the financial matters of Mt. Mazama Plywood.

The Commission directed the Attorney General to clarify the bankruptcy stay order to ensure that the Commission/Department is a party to the Chapter 11 bankruptcy proceedings.

The Commission recessed for lunch at this point, after which they intended to reconvene in Executive Session for the purpose of discussing with their attorney litigation options with respect to Mt. Mazama and also to further their Director selection process.

LUNCH MEETING

John Kowalczyk, Air Quality Planning and Development, reviewed for the Commission the ongoing woodstove program.

There was a brief discussion between staff and the Commission members on the Department's Goals and Objectives schedule and review.

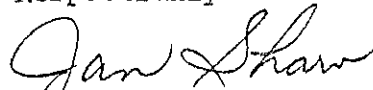
The action resulting from the Executive Session discussion was announced when the Commission reconvened in public session at the end of that Executive Session:

Mt. Mazama Plywood: The Commission authorized Robb Haskins to take any necessary action to remove the stay order or anything necessary which would enable the Commission/Department to proceed toward compliance, apart from the bankruptcy action.

Director selection process: The Commission selected seven applicants for interviewing. This will take place in a two-day Executive Session to be held on December 6 and 7, 1983, from 8:30 am to 5:00 pm, at 500 Pacific Building, 522 SW Yamhill Avenue, Portland.

There being no further business, the meeting was adjourned.

Respectfully submitted,



Jan Shaw
EQC Assistant

JS:d

THESE MINUTES ARE NOT FINAL UNTIL APPROVED BY THE EQC

MINUTES OF A SPECIAL MEETING OF THE
OREGON ENVIRONMENTAL QUALITY COMMISSION

October 13, 1983

On Thursday, October 13, 1983, a special meeting of the Oregon Environmental Quality Commission convened by conference telephone at the Department of Environmental Quality, Portland, Oregon. Present by telephone were Commission members Chairman Jim Petersen, Vice-Chairman Fred Burgess, and Wally Brill. Commissioners Denecke and Bishop were absent. Present in person on behalf of the Department were its Director, William H. Young, and several members of the Department staff.

SPECIAL MEETING

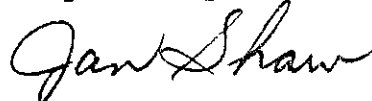
The Commission convened to discuss further the selection process for a new agency director. Questions from the Commission regarding requirements and constraints of the Public Meeting Law will be answered by Robb Haskins, Assistant Attorney General, in a subsequent memorandum.

Commissioner Burgess outlined several additional qualifications he considered important to look for in an applicant for this position, such as a degree from an accredited college, more years of work experience, preferably as a professional engineer, and at least five years of leadership as chief executive officer of a major agency or organization. He suggested an applicant be required to demonstrate leadership in environmental or natural resource groups. Building on these and other suggestions, the Commission amended the list of minimum qualifications for any applicant for this position.

It was MOVED by Commissioner Burgess, seconded by Commissioner Brill, and passed unanimously that the minimum qualifications be approved as amended, together with the position description as submitted, and to move forward as rapidly as possible in the hiring process.

There being no further business, the meeting was adjourned and the call terminated.

Respectfully submitted,



Jan Shaw
EQC Assistant

JS:j
Attachments

DOJ118

THESE MINUTES ARE NOT FINAL UNTIL APPROVED BY THE EQC

MINUTES OF THE ONE HUNDRED FIFTY-FIRST MEETING

OF THE

OREGON ENVIRONMENTAL QUALITY COMMISSION

October 7, 1983

On Friday, October 7, 1983, the one hundred fifty-first meeting of the Oregon Environmental Quality Commission convened at the Department of Environmental Quality, Portland, Oregon. Present were Commission members Chairman James Petersen; Vice-Chairman Fred J. Burgess; Wallace Brill; and Mary Bishop. Commissioner Arno Denecke was absent. Present on behalf of the Department were its Director, William H. Young, 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

Commissioners Petersen and Bishop were present. Commissioners Burgess and Brill were absent from the breakfast meeting but were present at the start of the formal meeting.

1. The Director introduced Susan Payseno, the agency's new Personnel Officer, to the Commission members.
2. Field burning wrap-up: Sean O'Connell, Field Burning Manager, reported on how the field burning program progressed this year. 203,000 acres were burned, which is down from the previous three years. The burns tended to be slower and smokier than usual this year because the wet weather had caused excessive greening of the fields.

O'Connell reviewed for the Commission the total number of hours of smoke impact in those cities affected. Overall, the program functioned fairly well in this area, and the overall complaints were down from previous years.

O'Connell described a plan for reorganizing and streamlining the field burning rules during this fiscal year. In preparation, he is studying performance standards for areas other than Eugene. The staff recommended that rule hearings be held before the Commission, and Chairman Petersen was inclined to agree.

Linda Zucker, EQC Hearings Officer, requested discussions be held on how enforcement procedures can be improved to address current problems with enforceability of the rules.

3. Future EQC meetings outside of Portland: Jan Shaw, EQC Assistant, reviewed for the Commission a suggested tentative schedule and locations for EQC meetings during the first part of 1984. Her report also included some typical costs involved in taking the Commission members and staff to cities outside of Portland.

Chairman Petersen favors meetings which are held in various areas of the state where it is appropriate to deal with specific issues. He suggested, however, that the Commission attempt to meet in Portland on alternate dates of the meeting schedule.

It was agreed that, barring unexpected complications, the Commission would meet in Medford on January 6, 1984, and in Eugene on February 17, 1984.

FORMAL MEETING

Commissioners Petersen, Burgess, Brill, and Bishop were present at the formal meeting.

AGENDA ITEM A: Minutes of the August 19, 1983, EQC Meeting

It was MOVED by Commissioner Bishop, seconded by Commissioner Burgess, and passed unanimously that the Minutes be approved.

AGENDA ITEM B: Monthly Activity Reports for July and August, 1983

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

AGENDA ITEM C: Tax Credits

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

PUBLIC FORUM: No one chose to appear.

AGENDA ITEM D: Request for Authorization to hold a Public Hearing to Amend OAR 340-21-025(2)(b) to Establish Special Municipal Incinerator Standards for Coastal Areas, and to Amend the State Implementation Plan.

The Department's particulate emission limits for incinerators appears to be a significant economic barrier to the application of this means of solid waste volume reduction in coastal areas. With very good ventilation and air quality in coastal areas, the Department believes its particulate emission limit could be relaxed without creating an air quality problem. The rule change proposed here would contain adequate safeguards to insure that visible emissions, odors, and toxic compounds will be adequately controlled.

Director's Recommendation

Based on the Summation, the Director recommends that the EQC authorize a hearing to consider establishment of special municipal waste incineration emissions rules for coastal counties. (See Attachment A).

It was MOVED by Commissioner Burgess, 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 Solid Waste Disposal Permit Fees, OAR 340-61-115.

The Department's FY83-85 budget anticipated support of 3 Solid Waste positions by permit fees. HB 2236, which enables the Department to charge solid waste permit fees, was passed by the Legislature. The Commission is empowered to adopt rules setting the permit fees. The proposed rule and all pertinent documents are attached to the staff report requesting permission to hold a public hearing.

Director's Recommendation

Based upon the Summation, it is recommended that the Commission authorize a public hearing to take testimony on the proposed Solid Waste Disposal Permit fee schedule, OAR 340-61-115.

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

AGENDA ITEM F: Request for Authorization to Conduct a Public Hearing on Proposed Rules Relating to Closure, Post-Closure Maintenance, and Financial Assurance of Solid Waste Disposal Sites, OAR 340-61-005 to 340-61-043.

The 1983 Legislature passed HB 2241 which enables the Department to more closely regulate closure of landfills. The legislation also requires post-closure maintenance and financial assurance of post-closure maintenance. The Department seeks Commission approval to hold a public hearing on rules relating to HB 2241.

Director's Recommendation

It is recommended that the Commission authorize a public hearing to take testimony on the proposed amendments to the Department's solid waste management rules, OAR 340-61-005 through 61-043.

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

AGENDA ITEM G: Approval of Lane Regional Air Pollution Authority Ozone Standard and Submission as a Revision to the State Implementation Plan.

Item G proposes to approve the ozone standard recently adopted by the Lane Regional Air Pollution Authority (LRAPA). The ozone standard adopted by LRAPA is identical to that adopted by the Commission in 1982 and that adopted by the Environmental Protection Agency in 1979. LRAPA held a public hearing on July 12, 1983, and did not receive any adverse testimony on the new ozone standard.

Director's Recommendation

It is recommended that the Commission approve LRAPA's new ozone standard at .12 ppm, as identical to OAR 340-31-030 and direct the Department to submit it to EPA as a SIP revision.

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

AGENDA ITEM H: Proposed Adoption of Amended Rules for Air Pollution Emergencies, OAR Chapter 340, Division 27, as a Revision to the Oregon State Implementation Plan.

The Emergency Action Plan proposed for adoption makes some needed changes in the existing rules. These changes were proposed to streamline administration of the Emergency Action Plan. Highlights include modification of the state ozone alert level to match the federal alert guideline level and more specific criteria to enable industrial sources to know when they must submit source emergency reduction plans.

Director's Recommendation

Based upon the Summation, it is recommended that the rules proposed in Attachment 1 be adopted. It is further recommended that OAR 340-27-005, 340-27-010, 340-27-015, 340-27-025, 340-27-035, and Tables 1, 2, 3, and 4 be submitted to EPA as a revision of the Oregon State Implementation Plan.

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

AGENDA ITEM I: Proposed Adoption of Amendments to OAR 340-22-110(2) (b) to Exempt 1,000 Gallon or Smaller Gasoline Storage Tanks in Medford AQMA From Submerged Fill Requirements.

This agenda item proposed to amend the state air quality rules on small gasoline storage tanks in the Medford area. It is in response to the petition accepted by the Commission at the May 20, 1983 meeting. A public hearing was held on July 7, 1983. All the testimony received by the Department was favorable to the rule change. The rule change would exempt 1,000-gallon or smaller gasoline storage tanks in the Medford area from submerged fill requirements. The Medford area has met the ozone standard and this rule relaxation would not hinder maintaining compliance.

Director's Recommendation

It is recommended the Commission adopt the amendment to the gasoline marketing rule, OAR 340-22-110, as attached as a revision to the State Implementation Plan.

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

AGENDA ITEM J: Proposed Adoption of Rules Amending Standards of Performance for New Stationary Sources OAR 340-25-510 to 655 to Incorporate New Federal Rules for Asphalt Processing and Asphalt Roofing and Five Volatile Organic Compound Sources and to Amend the State Implementation Plan.

This agenda item proposed to update the state air quality rules on New Source Performance Standards. The proposed state rules would incorporate new source categories addressed by the Environmental Protection Agency over the last year. No public or industry testimony was offered at the August 15, 1983, public hearing. The rules would allow DEQ to continue to administer the total federal program in the state.

Director's Recommendation

It is recommended that the Commission adopt the proposed attached amendments to OAR 340-25-510 to 340-25-675, rules on Standards of Performance for New Stationary Sources, and authorize the Department to submit those rule changes to EPA as amendments to the State Implementation Plan.

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

AGENDA ITEM K: Request for Approval of Preliminary Plan, Specifications and Schedule for Sanitary Sewers to Serve Health Hazard Annexation Area Known as Fir Villa Area, Contiguous to City of Dallas, Polk County.

Past surveys have shown failing septic tank systems in Fir Villa near Dallas. Pursuant to ORS 222.915, the State Health Division certified the area as a health hazard and ordered Dallas to annex the area and correct the problem.

The City of Dallas has submitted preliminary plans and specifications together with a time schedule for annexing and sewerage the area. ORS 222.898 requires the Commission to determine the adequacy of the time schedule and plans for correcting the health hazard. If approvable, the Commission must certify same to the City. The staff has reviewed the plans and timetable and consider them satisfactory.

Director's Recommendation

Based upon the findings in the summation, it is recommended that the Commission approve the proposal of the City of Dallas and certify approval to the City.

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

AGENDA ITEM L: Request for Approval of Proposed Fee Schedules for Services Related to the On-Site Sewage Disposal Program in Josephine County.

This is a request from Josephine County for Environmental Quality Commission approval to adopt three proposed fee schedules for services related to the on-site sewage disposal program. The county cannot adopt these fee schedules without Commission approval.

Director's Recommendation

Based upon the Summation, it is recommended the Commission approve Josephine County's proposed fee schedules for test hole placement assistance, record searches, and field review of potentially invalidated site evaluations.

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

AGENDA ITEM M: Request for a Class Variance from OAR 340-22-020(4) to Allow for Extension of Time to January 1, 1984 to Apply for an Exemption from the Residential Coal Use and Sale Restriction.

This item proposed to amend the state air quality rules on the residential coal rule exemption application deadline. The proposed amendment would extend the application date for existing coal users to apply for an exemption to January 1, 1984, six months beyond the original deadline of July 1, 1983.

Director's Recommendation

Based on the findings outlined in the Summation, it is recommended that the Commission grant a class variance from the original exemption application deadline of July 1, 1983 (OAR 340-22-020(4)) and allow an extension of time to January 1, 1984 to affected parties to apply for an exemption from the residential coal rule restriction.

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

At this point in the meeting, the Commission withdrew into Executive Session to discuss personnel matters. No action was taken.

AGENDA ITEM N: Request for a Variance From OAR 340-25-315(1)(b), Veneer Dryer Emission Limits, for Brand-S Corporation, Leading Plywood Division, Corvallis.

Brand-S Corporation has requested a variance from the Department's veneer dryer opacity rule for their Leading Plywood Division at Corvallis. The plant was certified in compliance in 1979 and 1980 after "home-built" gravel bed scrubbers were installed. Operational problems (plugged nozzles and de-mister sections) occurred, and the scrubbers were modified, resulting in noncompliance. Brand-S has submitted a schedule to install an experimental "sand/fabric" filter in one scrubber by October 10, 1983; review commercially available scrubbers and select a control technology by March 1, 1984; and demonstrate final compliance by October 1, 1984. The variance is necessary to allow continued operation while funding is reviewed and the above schedule carried out.

Director's Recommendation

Based upon the Summation, it is recommended that the Commission grant a variance to Brand-S Corporation, Leading Plywood Division, Corvallis, from OAR 340-25-315(1)(b), Veneer Dryer Emission Limits, with final compliance and increments of progress as follows:

1. Complete the experimental modifications presently underway on a fabric/sand filter for one scrubber by no later than October 10, 1983.
2. Review available "off-the-shelf" emission control systems from at least three vendors and submit documentation from the vendors on the suitability, expected performance and costs to the Department. Select the most suitable control device by no later than March 1, 1984.
3. Purchase and install the emission control system and demonstrate compliance with opacity limits by no later than October 1, 1984.
4. Submit monthly progress reports to the Department, beginning April 1, 1984, on the status of purchase and installation of the control device.

Owen Bently, Vice President for Corporate Affairs, Brand-S Corporation, addressed questions on financial matters from the Commission.

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

AGENDA ITEM O: Requests for Continuance of Open Burning Variances from OAR 340-61-040(2) -- Seaside and Cannon Beach, Oregon.

Cannon Beach and Seaside disposal sites have received a series of variances from the EQC to allow for continued open burning of garbage while planning for a suitable long-term solid waste disposal solution. Seven variances covering eight years have been granted. During this time period, various options have been explored but none have been successful. Private industry is currently exploring an incineration option and the cities in the county have formed a working group, funded a full-time position in the County Service District, and made a commitment to identify and implement an acceptable option by the 1984 construction season.

Director's Recommendation

Based upon the findings in the Summation, it is recommended that the Commission grant an extension of variances from OAR 340-61-040(2), until November 1, 1984, for Cannon Beach Sanitary Service and Seaside Sanitary Service, subject to the following conditions:

1. Progress toward establishment of a regional solid waste disposal program continues so that a viable alternative is in place by November 1, 1984.
2. Quarterly progress reports beginning January 1, 1984, be submitted to the Department. The first progress report shall contain a schedule of events leading to project completion.

Joan Dukes, Clatsop County Commissioner, assured the Commission that the schedule for compliance is achievable.

John Crockett, City of Astoria, supported Commissioner Dukes' statement, and his group supports the variance extension.

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

UNSCHEDULED ITEM: Enforcement Action--David McInnis and Polly McInnis dba Clearwater Industries, Inc., Schulz Sanitation, McInnis Enterprises, McInnis & Son, and L & M Enterprises.

The unscheduled item today results from the Commission's special meeting of September 23, 1983.

At that meeting, the Commission was apprised of a major sewage dump in the Columbia Slough by McInnis Enterprises. Because McInnis had failed to remove the sludge from the slough by the requested date, the Department was seeking the Commission's authorization to pursue cleanup by a court injunction.

The Commission took two actions:

1. Authorization to pursue court action was granted.
2. Staff was requested to provide the Commission with a status report on the cleanup action and provide information concerning further enforcement action.

Staff has prepared the requested report, and the cleanup has been completed. The details of the cleanup are outlined in the report.

Likewise, the Department has prepared a summary of enforcement alternatives. Based upon this party's past history, the flagrancy of the August 5 violation, the delay incurred in performing the cleanup, and continuing violations, the Department decided to pursue the revocation of the McInnis sewage disposal license.

The Department invited any suggestions or policy direction the Commission might provide.

Director's Recommendation

This is an informational item which does not require action on the part of the Commission.

In consideration of the repeated and continuing violations of McInnis, it is the Department's intention to seek revocation of the McInnis sewage disposal license. Due to the seriousness of the violations committed, the Department intends to request the Hearing Officer to schedule any required hearings on an expedited basis.

It was MOVED by Commissioner Burgess, seconded by Commissioner Bishop, and passed unanimously to strongly approve the Director's Recommendation.

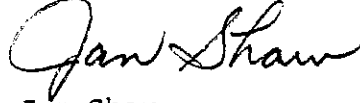
There being no further business, the meeting was adjourned.

LUNCH MEETING

1. Selection of new director: The Commission announced that Michael J. Downs, Administrator of the Management Services and Laboratory Divisions, had been chosen to serve as Acting Director until the selection of a new director. The Commission is anxious to select the best candidate they can find, even though it may take some time.

2. Director's meeting with Ernesta Barnes, EPA: The Director reviewed for the Commission his meeting with Barnes on October 6, 1983, to talk about the hazardous waste program and the work they expect the Department to accomplish. Significant difference exists between the way EPA pursues compliance and the way the Department seeks compliance. EPA would like to see documentation begin earlier in DEQ's process. EPA is not concerned with Oregon's statutes or the proposed rules but rather with the way the program would be implemented in this state.

Respectfully submitted,



Jan Shaw
EQC Assistant

JS:d
Attachments

THESE MINUTES ARE NOT FINAL UNTIL APPROVED BY THE EQC

MINUTES OF A SPECIAL MEETING OF THE
OREGON ENVIRONMENTAL QUALITY COMMISSION

September 23, 1983

On Friday, September 23, 1983, a special meeting of the Oregon Environmental Quality Commission was convened by conference telephone at the offices of the Department of Environmental Quality, Portland, Oregon. Present by telephone were Commission members Chairman Jim Petersen, Vice-Chairman Fred Burgess, Mary Bishop, Wally Brill, and Arno Denecke. Present in person on behalf of the Department were its Director, William H. Young, and several members of the Department staff.

Information presented at this meeting, is on file at 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.

SPECIAL MEETING

The Director described briefly for the Commission the case before them, the suspected illegal septic sludge dumping into the Columbia River Slough by McInnis Enterprises doing business as Schulz Sanitation.

Tom Bispham, Manager of the Northwest Regional Office, summarized the history of the company, contacts with the Department, and a list of suspected violations of the Department's rules. He also described the company's history of civil penalties assessed by the Department.

Brian Reynolds, Multnomah County Sheriff's Office, described the details of the criminal proceedings filed with Multnomah County involving Robert Churnside and Stephen McInnis, employees of the company.

The Commission withdrew into an Executive Session after clearing the room of all members of the public and any unnecessary staff, reminding any members of the press that they could not report on any of the proceedings during this portion of the meeting.

After the Commission convened again, it was MOVED by Commissioner Brill, seconded by Commissioner Burgess, and passed unanimously to proceed with the Director's recommendation to seek injunctive relief for cleaning up the Columbia Slough. They further instructed the Department not to enter into any other agreements in any stipulated agreement.

Staff will prepare pleadings to be filed in Court with the assistance of the Trial Division of the Justice Department. They will file this early next week. Staff was also asked to supply the Commission with updates on any subsequent action.

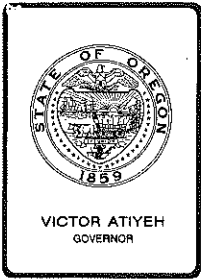
There being no further business, the meeting was adjourned and the call terminated.

Respectfully submitted,



Jan Shaw
EQC Assistant

JS:j
Attachments



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: Acting Director

Subject: Agenda Item No. B, November 18, 1983, EQC Meeting
September 1983 Program Activity Report

Discussion

Attached is the September 1983 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 Acting Director's recommendation that the Commission take notice of the reported activities and contested cases, giving confirming approval to the air contaminant source plans and specifications.

Michael J. Downs

CASplettstaszer:d
MD26
229-6484
Attachments



Contains
Recycled
Materials

DEPARTMENT OF ENVIRONMENTAL QUALITY

Monthly Activity Report

September 1983

Table of Contents

<u>Air Quality Division</u>	<u>Page</u>
Summary of Plan Actions	1
Listing of Plan Actions Completed	2
Summary of Permit Actions	3
Listing of Permit Actions Completed	4
<u>Water Quality Division</u>	
Summary of Plan Actions	1
Listing of Plan Actions Completed	5
Summary of Permit Actions	8
Listing of Permit Actions Completed	9
<u>Solid Wastes Management Division</u>	
Summary of Plan Actions	1
Summary of Solid and Hazardous Waste Permit Actions	11
Listing of Solid Waste Permit Actions Completed	12
Listing of Hazardous Waste Disposal Requests	13
<u>Noise Control Section</u>	
Summary of Noise Control Actions	18
Listing of Noise Control Actions Completed	19
<u>Enforcement Section</u>	
Civil Penalties Assessed	20
<u>Hearings Section</u>	
Contested Case Log	21
1983 Appeals to EQC	24

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

AQ, WQ, SW Division
(Reporting Unit)

September 1983
(Month and Year)

SUMMARY OF PLAN ACTIONS

	<u>Plans Received</u>		<u>Plans Approved</u>		<u>Plans Disapproved</u>		<u>Plans Pending</u>
	<u>Month</u>	<u>FY</u>	<u>Month</u>	<u>FY</u>	<u>Month</u>	<u>FY</u>	
<u>Air</u>							
Direct Sources	8	92	6	90	0	1	21
Small Gasoline Storage Tanks							
Vapor Controls	0	0	0	0	0	0	0
Total	8	92	6	90	0	1	21
<u>Water</u>							
Municipal	12	44	9	46	0	0	16
Industrial	4	14	5	23	0	0	6
Total	16	58	14	69	0	0	22
<u>Solid Waste</u>							
Gen. Refuse	1	8	1	7	0	0	7
Demolition	1	2	0	0	0	0	2
Industrial	0	2	1	1	0	0	5
Sludge	0	0	0	2	0	0	0
Total	2	12	2	10	0	0	14
<u>Hazardous Wastes</u>	2	3	0	3	0	0	2
<u>GRAND TOTAL</u>	28	165	22	172	0	1	59

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

COUNTY	NUMBER	SOURCE	PROCESS DESCRIPTION	DATE OF ACTION	ACTION
LINN	905	DURAFLEAKE CO	BAGHOUSE DUST COLL SYS	09/12/83	APPROVED
COLUMBIA	907	BOISE CASCADE PAPERS	DATA COLL & RED. COMPUTER	09/14/83	WITHDRAWN
DOUGLAS	910	LONE STAR MINERALS INC	ADDTL MULTI-ELEMENT SCRUBBER	09/02/83	APPROVED
LANE	913	GEORGIA PACIFIC CORP.	CLOSED CONV SYS & BAGHOUSE	09/14/83	APPROVED
PORT.SOURCE	923	K F JACOBSEN & CO INC	ROCK CRUSHER	09/29/83	APPROVED
JACKSON	924	CASCADE WOOD PRODUCTS INC	BAG HOUSE INSTALLATION	09/07/83	APPROVED
TOTAL NUMBER QUICK LOOK REPORT LINES			6		

70

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Air Quality Division
(Reporting Unit)

September, 1983
(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	3	9	2	6	20		
Existing	2	3	0	3	14		
Renewals	14	32	6	32	87		
Modifications	<u>0</u>	<u>9</u>	<u>3</u>	<u>12</u>	<u>14</u>		
Total	19	53	11	53	135	1714	1742
<u>Indirect Sources</u>							
New	4	5	0	0	6		
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	<u>4</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>6</u>	<u>206</u>	<u>212</u>
<u>GRAND TOTALS</u>	23	58	11	53	141	1920	1954

Number of
Pending Permits

Comments

37	To be reviewed by Northwest Region
19	To be reviewed by Willamette Valley Region
25	To be reviewed by Southwest Region
6	To be reviewed by Central Region
11	To be reviewed by Eastern Region
13	To be reviewed by Program Operations Section
0	To be reviewed by Planning & Development Section
15	Awaiting Public Notice
<u>9</u>	Awaiting end of 30-day Notice Period
135	

MAR.5 (8/79)
AZ399

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
JACKSON	MEDFORD CORP	15	0048 04/09/81	PERMIT ISSUED	08/26/83	RNW
DOUGLAS	MT. MAZAMA PLYWOOD	10	0022 00/00/00	PERMIT ISSUED	09/01/83	MOD
LINN	EUGENE CHEMICAL WORKS	22	4009 04/25/83	PERMIT ISSUED	09/09/83	RNW
PORT.SOURCE	WILLAMETTE WESTERN CORP	37	0212 07/28/83	PERMIT ISSUED	09/09/83	RNW
CRDOCK	AMERICAN FOREST PRDCTS CO	07	0002 05/25/82	PERMIT ISSUED	09/15/83	RNW
KLAMATH	JEFFERSON STATE ROCK PROD	18	0069 05/04/83	PERMIT ISSUED	09/15/83	NEW
MULTNOMAH	LOUIS DPEYFUS CORP	26	2000 04/27/83	PERMIT ISSUED	09/15/83	MOD
MULTNOMAH	WESTERN-PAC CONST MATL CO	26	2965 04/19/82	PERMIT ISSUED	09/15/83	RNW
WASHINGTON	UNION OIL CO OF CALIF	34	2651 05/20/83	PERMIT ISSUED	09/15/83	NEW
YAMHILL	AMITY COOP WAREHOUSE	36	0028 06/03/83	PERMIT ISSUED	09/15/83	MOD
YAMHILL	TAYLOR LUMBER CO	36	7004 05/04/83	PERMIT ISSUED	09/15/83	RNW
TOTAL NUMBER QUICK LOOK REPORT LINES				11		

4

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division
(Reporting Unit)

September 1983
(Month and Year)

PLAN ACTIONS COMPLETED 14

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

MUNICIPAL WASTE SOURCES 9

Lincoln	Whalers Rest RV Park Septic tank, dosing tank sand filter, subsurface sewage disposal system	9-8-83	P.A.
Washington	USA - North Plains Wastewater Pump Station and Force Main	9-9-83	P.A.
Jackson	Ashland Oak Knoll Meadows Sanitary Sewers	9-9-83	P.A.
Lane	Springfield Game Farm Road Sanitary Sewer	9-13-83	P.A.
Deschutes	Bend Contract No. 39 Sanitary Sewers	9-21-83	P.A.
Clackamas	Oak Lodge Sanitary District Good Oaks Subdivision Sanitary Sewers	9-22-83	P.A.
Jackson	Ashland Applewood Subdivision Sanitary Sewers	9-22-83	P.A.

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division
(Reporting Unit)

September 1983
(Month and Year)

PLAN ACTIONS COMPLETED

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

MUNICIPAL WASTE SOURCES Continued

Lincoln	Lincoln City Anchor-Coast-Dune L.I.D. Sanitary Sewers	9-22-83	P.A.	
Columbia	Riverwood Mobile Park Septic Tanks	9-28-83	P.A.	

P.A. = Provisional Approval

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division
(Reporting Unit)

September 1983
(Month and Year)

PLAN ACTIONS COMPLETED 14

* County	* Name of Source/Project * /Site and Type of Same	* Date of * Action	* Action	*
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INDUSTRIAL WASTE SOURCES 5

Clackamas	Fallen Oak Jerseys Manure Control System Molalla	9-7-83	Approved	
Tillamook	Fritz Hofman Manure Control System Tillamook	9-13-83	Approved	
Marion	Castle & Cook, Inc. Runoff Retention Pond Salem	9-8-83	Approved	
Douglas	Stubert Gean Manure Control System Roseburg	9-22-83	Approved	
Tillamook	C. Barry Sullivan Dairy Manure Control System Tillamook	9-26-83	Approved	

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division
(Reporting Unit)

September 1983
(Month and Year)

SUMMARY OF WATER PERMIT ACTIONS

	Permit Actions Received		Permit Actions Completed		Permit Actions Pending	Sources Under Permits	Sources Reqr'g Permits
	Month	Fis.Yr.	Month	Fis.Yr.			
	* /**	* /**	* /**	* /**	* /**	* /**	* /**
<u>Municipal</u>							
New	0 /1	1 /5	2 /1	3 /3	0 /7		
Existing	0 /0	0 /0	0 /0	0 /0	0 /0		
Renewals	5 /1	15 /6	5 /2	10 /5	36 /8		
Modifications	0 /0	0 /0	0 /0	0 /0	0 /0		
Total	5 /2	16 /11	7 /3	13 /8	36 /15	240/129	240/136
<u>Industrial</u>							
New	3 /0	3 /0	0 /0	0 /3	5 /3		
Existing	0 /0	0 /0	0 /0	0 /0	0 /1		
Renewals	2 /3	5 /6	1 /0	2 /3	37 /18		
Modifications	1 /0	1 /0	0 /0	0 /0	1 /0		
Total	6 /3	9 /6	1 /0	2 /6	43 /22	192/164	197/168
<u>Agricultural (Hatcheries, Dairies, etc.)</u>							
New	0 /0	0 /0	0 /0	0 /0	0 /0		
Existing	0 /0	0 /0	0 /0	0 /0	0 /0		
Renewals	0 /0	0 /0	0 /0	0 /0	0 /3		
Modifications	0 /0	0 /0	0 /0	0 /0	0 /0		
Total	0 /0	0 /0	0 /0	0 /0	0 /3	2 /14	2 /14
<u>GRAND TOTALS</u>	11 /5	25 /17	8 /3	15 /14	79 /40	434/307	439/318

* NPDES Permits

** State Permits

4 General Permits Granted.

Number of sources under permit have been adjusted by subtracting the 306 General Permits.

2 NPDES applications dropped - they were issued General Permits

1 NPDES application changed to WPCF application.

MAR.5W (8/79)

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division
(Reporting Unit)

September 1983
(Month and Year)

PERMIT ACTIONS COMPLETED

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

MUNICIPAL AND INDUSTRIAL SOURCES NPDES (8)

Josephine	City of Cave Junction STP	9-1-83	Permit Renewed
Benton	North Albany County Service District, STP	9-1-83	Permit Renewed
Josephine	Riviera Mobile Home Park and Sales, STP Grants Pass	9-1-83	Permit Renewed
Tillamook	Twin Rocks Sanitary Dist. STP	9-1-83	Permit Renewed
Clatsop	Windjammer Resort Corp. STP Gearhart	9-9-83	Permit Issued
Hood River	City of Cascade Locks STP	9-22-83	Permit Renewed
Tillamook	Tillamook County Creamery Association	9-22-83	Permit Renewed
Clackamas	Tri City Service District STP Oregon City	9-22-83	Permit Issued

MUNICIPAL AND INDUSTRIAL SOURCES - STATE (3)

Harney	City of Burns STP	9-22-83	Permit Renewed
Jefferson	City of Madras STP	9-22-83	Permit Renewed
Clackamas	The Salvation Army Camp Trestle Glen, STP	9-22-83	Permit Issued

MAR.6 (5/79)

WG2701

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Water Quality Division
(Reporting Unit)

September 1983
(Month and Year)

PERMIT ACTIONS COMPLETED

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

MUNICIPAL AND INDUSTRIAL SOURCES GENERAL PERMITS (4)

Cooling Water - Permit 0100J, File 32550 (2)

Linn	Louis F. Snook Lebanon (Heat Pump)	9-7-83	General Permit Granted
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Benton	Bert Cleary Corvallis (Heat Pump)	9-7-83	General Permit Granted
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Fish Hatcheries - Permit 0300J, File 32560 (1)

Curry	William H. Hinkle Clearwater Farm Port Orford	9-26-83	General Permit Granted
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Gold Mining - Permit 0600J - File 32580 (1)

Josephine	Bruce W. Crawford Merlin	9-8-83	General Permit Granted
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DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste Division
(Reporting Unit)

September 1983
(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	1	2	1	1	2		
Existing	-	-	-	-	-		
Renewals	2	4	3	3	7		
Modifications	-	3	-	4	1		
Total	3	9	4	8	10	173	173
<u>Demolition</u>							
New	-	-	-	-	-		
Existing	-	-	-	-	-		
Renewals	2	2	-	-	2		
Modifications	-	-	-	-	-		
Total	2	2	0	0	2	17	17
<u>Industrial</u>							
New	-	1	-	-	6		
Existing	-	-	-	-	-		
Renewals	3	1	0	1	11		
Modifications	-	-	-	-	1		
Total	3	2	0	1	18	102	102
<u>Sludge Disposal</u>							
New	-	-	-	-	-		
Existing	-	-	-	-	-		
Renewals	5	6	2	2	4		
Modifications	-	-	-	1	-		
Total	5	6	2	3	4	16	16
<u>Hazardous Waste</u>							
New	-	-	-	1	5		
Authorizations	71	372	71	372	-		
Renewals	-	-	-	-	1		
Modifications	-	-	-	-	-		
Total	71	372	71	373	6	13	18
<u>GRAND TOTALS</u>	84	391	77	385	40	321	326

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste Division

(Reporting Unit)

September 1983

(Month and Year)

PERMIT ACTIONS COMPLETED

* County	* Name of Source/Project * /Site and Type of Same	* Date of * Action	* Action	*
Lake	Dept. Fish & Wildlife Sewage sludge site	9/6/83	Letter authorization renewed	*
Lincoln	Waldport Landfill Existing facility	9/13/83	Permit renewed	*
Lincoln	Fall Creek Hatchery New disposal site	9/22/83	Letter authorization issued	*
Marion	Brown's Is. Landfill Existing facility	9/22/83	Permit renewed	*
Klamath	JNS Sludge Lagoon Existing facility	9/29/83	Permit renewed	*
Douglas	Elkton Transfer Station Existing facility	9/30/83	Permit renewed	*

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Solid Waste Division
(Reporting Unit)

September 1983
(Month and Year)

HAZARDOUS WASTE DISPOSAL REQUESTS

CHEM-SECURITY SYSTEMS, INC., GILLIAM CO.

WASTE DESCRIPTION

* Date *	Type	Source	Present	Quantity	Future
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TOTAL DISPOSAL REQUESTS GRANTED - 71

OREGON - 20

9/7	Zn-Cr hydroxide sludge	Electroplating	--	5,000 gal.	
9/7	Phenolic resin sludge	Resin prod.	--	40 drums	
9/8	Paint sludge	Plywood mfg.	--	120 drums	
9/14	Paint sludge	Mfg. of mining equipment	--	300 gal.	
9/14	Paint booth and equipment cleanup sludge	"	--	400 gal.	
9/14	Dry paint scale and contaminated sweeping debris	"	--	300 gal.	
9/14	Trichloroethylene still bottoms	"	--	100 gal.	
9/14	Lab chemicals	School	--	15 drums	
9/19	PCB capacitors	Paper co.	15 units	--	
9/19	PCB transformers	Bldg. mainten.	321 gal.	--	
9/21	Lead containing bag-house zinc dust	Foundry	6 drums	15 drums	
9/26	Sulfuric acid solution	Circuit boards	--	20 drums	
9/26	Caustic electroless copper solution	"	--	1,000 gal.	

* * *	* Date *	* Type *	* Source *	* Present *	* Quantity * Future *	* *
	9/30	Salt bath containing sodium and barium chloride	Metal fabrication	--	10 drums	
	9/30	2,4-D, MCPP and MCPA contaminated materials	Herbicide mfg.	--	10 to 20 drums	
	9/30	Herbicide mfg. waste containing 2,4-D and MCPA	"	--	30 drums	
	9/30	PCB transformers	Dept. of Defense	390 gal.	--	
	9/30	Dilute solution of tetrachlorophenol in water	Lumber co.	--	750 gal.	
	9/30	Tetrachlorophenol-contaminated filters and gloves	"	--	500 lb.	
	9/30	Decanted gasoline fraction	Oil co.	--	40 drums	

WASHINGTON - 38

	9/7	Oil/grease-contaminated perchloroethylene	Metal finishing	--	2 drums	
	9/7	Chrome conversion coat solution	"	--	8 drums	
	9/7	Chromium sulfate/sodium sulfate solution	"	--	4 drums	
	9/7	Perchloroethylene with MEK and cyclohexanone	"	--	2 drums	
	9/8	Lead-contaminated rust, dirt, etc.	Waste handler	--	120 drums	
	9/8	Flow solder tinning oil	Electronic co.	--	24 drums	
	9/8	Lead-contaminated dirt/soil	University	--	25 drums	
	9/8	Disulfoton insecticide	Pesticide supplier	2 drums	--	

* * *	* * *	* * *	* * *	* * *	* * *	* * *	* * *
Date	Type	Source	Present	Quantity	Future		
9/8	Zinc chromate containing spray booth sludge	Painting of aircraft parts	--	5 drums			
9/12	Misc. ignitable chemicals	Electronic co.	--	12 drums			
9/12	Neutralization sludge containing fluoro-zirconate	Research lab	--	30 drums			
9/12	Pesticides containing DDT	University	500 lb.	--			
9/13	PCB capacitors	Electronic co.	--	1.9 kg.			
9/13	PCB liquid	"	5 gal.	--			
9/14	PCB articles	Dept. of Int.	--	37 cu.ft.			
9/15	PCB-contaminated dirt/rags	Spill cleanup	100 lb.	--			
9/19	Mineral oil contaminated with phenolics	Chemical co.	5,000 gal.	--			
9/19	Spent acid mixture	Zn electroplating	3,590 gal.	--			
9/19	Spent caustic mixture	"	2,615 gal.	--			
9/26	Spent electrolytic pot lining	Aluminum smelting	--	1,950 tons			
9/27	Silane-contaminated lube oil	Silane prod.	--	5 to 20 drums			
9/27	Calcium fluoride filter cake	Polysilicon production	--	100 drums			
9/27	Methylene chloride sludge	Electronic co.	--	7,500 gal.			
9/27	Lead-contaminated organic acid containing IPA	"	--	500 gal.			
9/27	Lead-contaminated tinning fluid/soldering oil	"	--	1,000 gal.			
9/29	Soil fumigant Vapam	City Pub. Works	20 gal.	--			

* * *	* Date *	* Type *	* Source *	* Present *	Quantity * Future *		* *
	9/29	Herbicide Diquate	City Pub. Works	20 gal.	--		
	9/29	Weather shield chemical	"	20 gal.	--		
	9/29	Wetting agent	"	1 drum	--		
	9/29	Diazinon insecticide	"	10 gal.	--		
	9/29	Growtard - 29% ethanola- mine	"	27 gal.	--		
	9/29	UL 244 - 9% 2,4-D	"	1 drum	--		
	9/29	Selective weed killer - 16% 2,4-D	"	40 gal.	--		
	9/29	Vegikill - 1% 2,4-D	"	40 gal.	--		
	9/29	Zep weed killer - 40% ammonium sulfamate	"	40 gal.	--		
	9/29	Ink sludge	Ink mfg.	--		12 drums	
	9/29	PCB transformers	Electric util.	--		25 units	
	9/30	Corrosive liquid	City Pub. Parks	55 gal.	--		
OTHER STATES - 13							
	9/1	Sodium hydroxide	Oil drilling (AK)	3,000 lb.	--		
	9/1	Chrome alum	"	6,000 lb.	--		
	9/9	Monoethanolamine reclaimer bottoms and wash water	Nat. gas prod. (Alberta)	300 drums	--		
	9/9	Degraded sulfinol reclaimer bottoms	"	290 drums		80 drums	
	9/14	Mercury lamps and thermometers	Electronic co. (UT)	--		2 drums	
	9/15	Ferric chloride	Water treatment (AK)	1,200 gal.	--		
	9/15	Caustic soda	"	935 gal.	--		

* * *	* Date *	* Type *	* Source *	* Present *	* <u>Quantity</u> * Future *	* *
	9/26	Sump water contaminated with xylene and oil	Shipyard (HI)	--	100 drums	
	9/27	Solder flux containing organic acids and IPA	Electronic co. (ID)	--	770 gal.	
	9/27	Mixed solvents of xylene, aryl alcohol, butyl cellosolve, stoddard solvent and paraffins	"	--	800 gal.	
	9/27	Disc grinding fluid of mineral oil, fatty acids, organic esters and kerosene	"	--	100 gal.	
	9/27	Tri-acid bath consisting of HF, HNO ₃ , and H ₂ SO ₄	"	--	600 gal.	
	9/27	Solder flux tinning fluid polyglycol ether	"	--	1,000 gal.	

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Noise Control Program
(Reporting Unit)

September, 1983
(Month and Year)

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	7	37	8	31	119	120
Airports			1	4	0	0

DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY ACTIVITY REPORT

Noise Control Program	September, 1983
(Reporting Unit)	(Month and Year)

FINAL NOISE CONTROL ACTIONS COMPLETED

County	Name of Source and Location	Date	Action
Clackamas	Carlton Chainsaw Milwaukie	09/83	In Compliance
Clackamas	Foster Auto Parts Clackamas	09/83	No Violation
Clackamas	R. Watson Woodcutting Oregon City	09/83	In Compliance
Multnomah	Good Time Charlie's Tavern Portland	09/83	Referred to Portland Noise Program and OLCC for Enforcement
Multnomah	Shop 'N' Kart Grocery Store Portland	09/83	In Compliance
Multnomah	Tuss Crushing Portland	09/83	In Compliance
Washington	Glen Walters Nursery Hillsboro	09/83	Oregon Legislature adopted Pre-emption for DEQ Noise Pollution Control. No Further Action
Benton	Oregon National Guard Firing Range Camp Adair	09/83	In Compliance
Linn	Lebanon Community Hospital Heliport Lebanon		Exception. Approved for Infrequent Events

CIVIL PENALTY ASSESSMENTS

DEPARTMENT OF ENVIRONMENTAL QUALITY
1983

CIVIL PENALTIES ASSESSED DURING MONTH OF SEPTEMBER, 1983:

<u>Name and Location of Violation</u>	<u>Case No. & Type of Violation</u>	<u>Date Issued</u>	<u>Amount</u>	<u>Status</u>
McInnis Enterprises, Ltd. dba/Schulz Sanitation Portland, Oregon	WQ-NWR-83-79 Dumped sewage/ septage waste into public waters.	9-2-83	\$10,500	Hearing request and answer filed on 9-28-83.
Stephen McInnis Portland, Oregon	WQ-NWR-83-79 Dumped sewage/ septage waste into public waters.	9-2-83	\$2,000	Hearing request and answer filed on 9-28-83.
Robert Churnside Portland, Oregon	WQ-NWR-83-79 Dumped sewage/ septage waste into public waters.	9-2-83	\$2,000	Hearing request and answer filed on 9-28-83.

SEPTEMBER 1983
DEQ/EQC Contested Case Log

<u>ACTIONS</u>	<u>LAST MONTH</u>	<u>PRESENT</u>
Preliminary Issues	2	5
Discovery	0	1
Settlement Action	0	1
Hearing to be scheduled	4	6
Hearing scheduled	4	2
HO's Decision Due	3	5
Briefing	0	0
Inactive	5	4
SUBTOTAL of cases before hearings officer.	<u>18</u>	<u>24</u>
HO's Decision Out/Option for EQC Appeal	0	0
Appealed to EQC	0	0
EQC Appeal Complete/Option for Court Review	1	0
Court Review Option Pending or Taken	0	0
Case Closed	3	3
TOTAL Cases	<u>22</u>	<u>27</u>

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
 FWO Frank Ostrander, Assistant Attorney General
 Hrng Rfrl Date when Enforcement Section requests Hearing Section schedule a hearing
 Hrngs Hearings Section
 LMS Larry Schurr, Enforcement 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
 RLH Robert L. Haskins, Assistant Attorney General
 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
 VAK Van Kollias, Enforcement Section
 WQ Water Quality Division
 WVR Willamette Valley Region

DEQ/EQC Contested Case Log

Pet/Resp Name	Hrng Rqst	Hrng Rfrl	DEQ Atty	Hrng Date	Resp Code	Case Type & No.	Case Status
WAH CHANG	04/78	04/78	RLH		Prtys	16-P-WQ-WVR-78-2849-J NPDES Permit Modification	Current permit in force. Hearing deferred.
WAH CHANG	04/78	04/78	RLH		Prtys	03-P-WQ-WVR-78-2012-J NPDES Permit Modification	Current permit in force. Hearing deferred.
M/V TOYOTA MARU No. 10	12/10/79	12/12/79	RLH		<u>Prtys</u>	17-WQ-NWR-79-127 Oil Spill Civil Penalty of \$5,000	Settlement being dis- cussed. <u>Ruling on cross motions for summary judgment issued 8/16/83.</u>
FULLEN, Arthur W. dba/Foley Lakes Mobile Home Park	07/15/81	07/15/81	RLH		Prtys	16-WQ-CR-81-60 Violation of EQC Order, Civil Penalty of \$500	Dept. does not wish to actively pursue further enforcement action pen- ding expected progress in establishing a community sewage facility.
FRANK, Victor	09/23/81	09/23/81	LMS	06/08/82	Resp	19-AQ-FB-81-05 FB Civil Penalty of \$1,000	No court appeal. Case closed.
GAYES, Clifford	10/06/81		LMS	08/23/83	Prtys	21-SS-SWR-81-90 SS Civil Penalty of \$275	Dept. withdrew notice of assessment. Case closed by order of 9/9/83.
SPERLING, Wendell dba/Sperling Farms	11/25/81	11/25/81	LMS	03/17/83	Hrngs	23-AQ-FB-81-15 FB Civil Penalty of \$3,000	Decision due.
FULLEN, Arthur dba/Foley Lakes Mobile Home Park	03/16/82	03/29/82	RLH		Prtys	28-WQ-CR-82-16 Violation of EQC Order, Civil Penalty of \$4,500	See companion case above.
OLINGER, Bill Inc.	09/10/82	09/13/82	RLH	10/20/83	Prtys	33-WQ-NWR-82-73 WQ Civil Penalty of \$1,500	Hearing <u>conducted</u> <u>10/20-21. To resume</u> <u>11/2/83.</u>
TOEDEMEIER, Norman	09/10/82	09/13/82	LMS	07/14/83	Hrngs	34-AQOB-WVR-82-65 OB Civil Penalty of \$250	Decision due.
SYLER, Richard E.	09/20/82	09/28/82	VAK	05/24/83	Hrngs	35-AQOB-WVR-82-76 OB Civil Penalty of \$100.	Decision due.
FIREBALL CONSTRUCTION CORP. & Glenn Dorsey	09/27/82		RLH		Prtys	38-SS-SWR-82-85 Remedial Action Order	Dept. withdrew notice of assessment. Case dismissed by order of 9/9/83.
TIPPET, James	12/02/82	12/06/82	LMS	09/15/83	<u>Hrngs</u>	39-AQ-FB-82-AG1 Ag. Burning Civil Penalty of \$50	<u>Decision due.</u>
GIANELLA, Vermont	12/17/82	12/28/82	VAK	09/20/83	<u>Hrngs</u>	41-AQ-FB-82-08 FB Civil Penalty of \$1,000	<u>Decision due.</u>
SCHLEGEL, George L.	12/30/82	01/03/83	VAK		Hrngs	43-AQ-FB-82-05 FB Civil Penalty of \$400	To be scheduled.
FAXON, Jay dba/Faxon Farms	01/03/83	01/07/83	LMS		<u>Hrngs</u>	44-AQ-FB-82-07 FB Civil Penalty of \$1,000	To be scheduled.
MARCA, Gerald	01/06/83	01/11/83	LMS	11/09/83	Prtys	45-SS-SWR-82-101 SS Civil Penalty of \$500, 46-SS-SWR-82-114 Remedial Action Order	Hearing rescheduled.

September 1983

DEQ/EQC Contested Case Log

<u>Pet/Resp Name</u>	<u>Hrng Rqst</u>	<u>Hrng Rfrrl</u>	<u>DEQ Atty</u>	<u>Hrng Date</u>	<u>Resp Code</u>	<u>Case Type & No.</u>	<u>Case Status</u>
ALTHAUSER, Glenn L.	01/28/83	02/03/83	LMS		Hrngs	47-SW-NWR-82-111 Solid Waste Civil Penalty of \$350	To be scheduled.
HAYWORTH FARMS, INC., and HAYWORTH, John W.	01/14/83	02/28/83			Hrngs	50-AQ-FB-82-09 FB Civil Penalty of \$1,000	To be scheduled.
OREGON SUN RANCH	04/04/83	04/12/83	RLH		Prtys	51-AQ-CR-83-33 AQ Civil Penalty of \$500.	<u>To be scheduled.</u>
MCINNIS ENT.	06/17/83	06/21/83	LMS		Prtys	52-SS-SW-NWR-83-47 SS/SW Civil Penalty of \$500.	Preliminary issues.
<u>TELEDYNE WAH CHANG ALBANY.</u>	<u>09/07/83</u>	<u>09/08/83</u>	<u>RLH</u>		<u>Prtys</u>	<u>53-AQOB-WVR-83-73</u> <u>OB Civil Penalty</u> <u>of \$4000</u>	<u>Preliminary issues.</u>
<u>CRAWFORD, Raymond M.</u>	<u>09/15/83</u>	<u>09/16/83</u>	<u>LMS</u>		<u>Prtys</u>	<u>54-AQOB-NWR-83-63</u> <u>OB Civil Penalty</u> <u>of \$2000</u>	<u>To be scheduled.</u>
<u>MID-OREGON CRUSHING</u>	<u>09/19/83</u>	<u>09/27/83</u>	<u>RLH</u>		<u>Prtys</u>	<u>55-AQ-CR-83-74</u> <u>AQ Civil Penalty</u> <u>of \$4500</u>	<u>Preliminary issues.</u>
<u>MCINNIS ENTERPRISES, Ltd. dba Schultz Sanitation; Stephen James McInnis; and Robert Churnside</u>	<u>09/20/83</u>	<u>09/22/83</u>	<u>RLH</u>		<u>Dept</u>	<u>56-WQ-NWR-83-79</u> <u>WQ Civil Penalty</u> <u>of \$14,500</u>	<u>Preliminary issues/ discovery.</u>
<u>WARRENTON, City of</u>	<u>8/18/83</u>	<u>10/05/83</u>	<u>RLH</u>		<u>Resp</u>	<u>57-SW-NWR-FMT-120</u> <u>SW Permit Appeal</u>	<u>Preliminary issues.</u>
<u>CLEARWATER IND., Inc.</u>	<u>10/11/83</u>	<u>10/17/83</u>	<u>RLH</u>		<u>Prtys</u>	<u>58-SS-NWR-83-82</u> <u>SS Civil Penalty</u> <u>of \$1000</u>	<u>Preliminary issues.</u>

1983 APPEALS TO EQC

Hayworth, John W.
33-AQ-WVR-80-187

On 4/8/83 the EQC allowed Respondent's appeal and dismissed the case.

Adams, Galen
33-SS-NWR-82-51

On 4/8/83 the EQC affirmed the hearing officer's order assessing a \$100 civil penalty for installing a portion of an on-site sewage system without first obtaining a permit. Mr. Adams paid the penalty.

Moore, Dale
40-SS-NWR-82

On 4/8/83 the EQC reversed the variance officer's order and authorized a variance from on-site sewage rules.

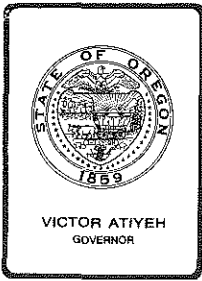
Oregon Environmental
Council.
48-Petition for
Declaratory Ruling

On 4/8/83 the EQC denied OEC's petition for declaratory ruling on applicability of certain statutes and rules to DEQ's jurisdiction over the spraying of the pesticide Sevin into Tillamook Bay.

Frank, Victor
19-AQFB-81-05

On 7/8/83 the EQC upheld the hearing officer's order assessing a \$1,000 civil penalty for violating DEQ's field burning rules.

MD144



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: Acting Director
Subject: Agenda Item C, November 18, 1983, EQC Meeting

TAX CREDIT APPLICATIONS

Acting Director's Recommendation

It is recommended the Commission approve the following tax credit applications:

<u>Appl.</u> <u>No.</u>	<u>Applicant</u>	<u>Facility</u>
T-1589	Teledyne Industries, Inc.	Fume control and spill protection system
T-1603	Trojan Nuclear Project	Containment building and associated equipment
T-1638	Trojan Nuclear Project	Fuel and auxilliary buildings and associated equipment
T-1639	Trojan Nuclear Project	Liquid waste radioactivity control system
T-1640	Precision Castparts Corp.	Bag filter dust collector with ductwork
T-1641	Precision Castparts Corp.	Two individual bag filter dust control systems
T-1642	Precision Castparts Corp.	Bag filter dust collection system
T-1643	Publishers Paper Co.	Floating aerator
T-1644	Timber Products Company	Wood particle dryer and wet sand filter system
T-1645	Publishers Paper Co.	Upgrade of existing water pollution control facility
T-1646	Publishers Paper Co.	Venturi scrubber with associated equipment

Michael J. Downs

CASplettstaszer
229-6484
10/28/83
Attachments

Agenda Item C
November 18, 1983, EQC Meeting
Page 2

PROPOSED NOVEMBER 1983 TOTALS

Air Quality	\$20,830,079
Water Quality	8,697,353
Solid/Hazardous Waste	-0-
Noise	-0-
	<u>\$29,527,432</u>

CALENDAR YEAR TOTALS TO DATE

Air Quality	\$12,274,225
Water Quality	27,442,663
Solid/Hazardous Waste	1,329,526
Noise	11,840
	<u>\$41,058,254</u>

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

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

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

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

2. Description of Claimed Facility

The facility described in this application is a feed make-up solution storage fume control and spill protection system consisting of a Venturi scrubber, fan, pump, scrubber liquid tank, ductwork, stack and sampling platform (air pollution control), and a sealed berm floor, sump and sump pump (water pollution control).

Request for Preliminary Certification for Tax Credit was made on April 12, 1979, and approved on June 5, 1979.

Construction was initiated on the claimed facility in June 1979, completed on September 15, 1980, and the facility was placed into operation on September 15, 1980.

Facility Cost: \$150,428 (Accountant's Certification was provided).

The accountant's certification indicated a total feed make-up solution storage facility cost of \$299,000. An amended cost breakdown was submitted by the applicant dated September 28, 1983 which deleted process equipment and showed \$115,971.00 for air pollution control equipment and \$34,457.00 for water pollution control equipment. (\$115,971.00 plus \$34,457.00 equals \$150,428.)

3. Evaluation of Application

The claimed facility was installed in conjunction with the installation of the feed make-up solution storage equipment. Filling the storage tanks causes acid fumes, primarily hydrogen chloride (HCl), to be displaced.

Treatment of such fumes is required by the applicant's Air Contaminant Discharge Permit. DEQ rules require spill protection for tanks containing potentially hazardous or toxic materials. Thus, the claimed facility was installed in accordance with Department requirements to prevent air and water pollution.

Results of inspections and source tests indicate that the claimed facility is in compliance with DEQ permits and rules. Scrubber blow-down and spilled solution are routed to the pH control section of the Company's liquid waste treatment/discharge system.

Since no economic return is realized from the claimed facility, it is concluded that its principal purpose is air and water pollution control, and that 80 percent or more of the cost is allocable to pollution control.

The application was received on January 3, 1983, additional information was received on October 11, 1983, and the application was considered complete on October 11, 1983.

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 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% or more.

5. Acting Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$150,428 with 80% or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1589.

F. A. SKIRVIN:a
AA3960
(503) 229-6414
October 25, 1983

State of Oregon
 Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Trojan Nuclear Project

Portland General Electric Company
 121 S.W. Salmon Street
 Portland, OR 97204

Pacific Power & Light Company
 920 S.W. Sixth Avenue
 Portland, OR 97204

City of Eugene, Acting By and Through
 The Eugene Water and Electric Board
 P.O. Box 10148
 Eugene, OR 97440

The applicant owns and operates a nuclear-fueled electricity generating facility located along U.S. Highway 30 near Rainier, Oregon.

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

2. Description of Claimed Facility

The facilities described in this application are associated with the containment building and consist of the following equipment and applicable installed costs:

	<u>Applicable Installed Cost</u>
a. Steel reinforced concrete containment structure.	\$3,397,794
b. Black iron containment structure liner.	5,243,350
c. Containment purge supply system (CS-1)	135,032.62
d. Containment purge exhaust and refueling pool supply/exhaust system (CS-2)	144,698.50

	<u>Applicable Installed Cost</u>
e. Containment air cooler system and associated structural supports (CS-7)	\$1,877,415.35
f. Hydrogen mixing system (CS-8)	37,331.77
g. Hydrogen venting system (CS-9)	73,204.32
h. Hydrogen recombiner units	246,912.90
i. Duct work and associated equipment	1,528,510.73
j. Related monitoring equipment	559,735.11
	<hr/> \$13,243,985.30

Notice of Intent to Construct and Preliminary Certification for Tax Credit are not required.

Construction was initiated on the claimed facility in May 1971, completed in December 1975, and the facility was placed into operation in December 1975.

Facility Cost: \$13,243,985 (Accountant's Certification was provided).

The accountant's certification shows a facilities cost of \$20,543,985. However, the applicant deducted \$7,300,000 from the actual cost of the concrete containment structure which was \$10,697,795. The \$7,300,000 is an estimated cost of a seismic structure which would have been adequate to provide weather protection if emission controls were not necessary. Thus, subtracting \$7,300,000 from \$20,543,985 yields \$13,243,985.

3. Evaluation of Application

The applicants have requested certification of those elements and equipment within the containment building as set forth in Section 2 above. The containment building also houses the reactor vessel and steam generator which are not parts of the facilities claimed herein.

During the operation of a nuclear reactor, radioactive gases evolve. Some of these gases adsorb onto airborne dusts and thereby render the dust particles radioactive. The Nuclear Regulatory Commission (NRC) limits the emission rates and ambient levels of radioactive materials (gaseous and particulate) to the atmosphere from nuclear power plants. In order to comply with these limits, the emissions must be controlled by appropriate combinations of retention (to allow for decay of short-lived isotopes), high efficiency filtration of dusts and

activated carbon adsorption of some gases. Acceptable operation of containment building emissions control systems are determined by associated radioactive, temperature, pressure, hydrogen and particulate monitoring equipment. Used filters, spent activated carbon and other radioactive solid wastes generated by these claimed facilities are transported to Hanford for final disposal.

The facilities claimed in this application were installed during construction of the Trojan Nuclear Plant and are currently operated to control emissions from the containment building. Information in the application indicates that emission rates and ambient levels of radioactive materials are well below appropriate NRC limits.

The applicants have advised the Department that equipment installed in the containment building after initial construction will be the subject of an application to be submitted in the near future.

The Department has concluded that the facilities described in Application T-1603 were necessarily installed and are being operated for the purpose of maintaining continuous compliance with NRC imposed limits for emission rates and ambient levels of radioactive materials emanating from the containment building. It is also concluded that the applicants' reduction of the actual cost of the containment structure for weather protection benefits is appropriate and reasonable.

There is no return on investment from the facilities claimed in this application.

The application was received on January 25, 1983, additional information was received on June 8 and October 11, 1983, and the application was considered complete on October 11, 1983.

4. Summation

- a. The facilities were not required to have prior approval to construct or preliminary certification.
- b. The facilities were constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).
- c. The facilities are designed for and are being operated to a substantial extent for the purpose of preventing, controlling, or reducing air pollution.
- d. The facilities are 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% or more.

Application No. T-1603

Page 4

5. Acting Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$13,243,985 with 80% or more allocated to pollution control, be issued for the facilities claimed in Tax Credit Application No. T-1603.

F.A. SKIRVIN:a
AA3954
(503) 229-6414
October 24, 1983

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Trojan Nuclear Project

Portland General Electric Company
121 S.W. Salmon Street
Portland, OR 97204

Pacific Power & Light Company
920 S.W. Sixth Avenue
Portland, OR 97204

City of Eugene, Acting By and Through
The Eugene Water and Electric Board
P.O. Box 10148
Eugene, OR 97440

The applicant owns and operates a nuclear-fueled electricity generating facility located along U.S. Highway 30 near Rainier, Oregon.

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

2. Description of Claimed Facility

The facilities described in this application are associated with the fuel and auxilliary buildings and consist of the following equipment and applicable installed costs:

	<u>Applicable Installed Cost</u>
a. Fuel and auxilliary buildings exhaust systems including ductwork and related equipment (AB-3 and AB-4)	\$1,272,855
b. Process exhaust radiation monitoring systems (PRM-3, PRM-4, PRM-5, and a portion of C-41)	201,322

Applicable Installed Cost

c. Gaseous radwaste treatment systems (T-314, T-315A,B,C, & D, and C-301 A&B) and related piping, valves, filters and instrumentation	2,830,030
d. Applicable portion of auxilliary building (approx. 6.35%)	470,000
	<hr/>
	\$4,774,207

Notice of Intent to Construct and Preliminary Certification for Tax Credit are not required.

Construction was initiated on the claimed facility in March 1971, completed in December 1975, and the facility was placed into operation in December 1975.

Facility Cost: \$4,774,207 (Accountant's Certification was provided).

The accountant's certification shows a facilities cost of \$4,912,321. An amendment to the application received on October 11, 1983 indicates that one system (AB-4) has been modified and three systems (PRM-1, PRM-2 and PRM-6) are currently being replaced. The installed cost of these modifications/deletions amount to \$138,114. Subtracting this amount (\$138,114) from \$4,912,321 yields \$4,774,207.

3. Evaluation of Application

The applicants have requested certification of those elements and equipment within the fuel and auxilliary buildings as set forth in Section 2 above. Storage/handling of fuel (new and spent) performed in the fuel building and coolant purification/storage and radwaste (liquid) treatment conducted in the auxilliary building are operations that can release radioactive gases. Some of these gases adsorb onto airborne dust, thereby causing the dust particles to be radioactive.

The Nuclear Regulatory Commission (NRC) limits the emission rates and ambient levels of radioactive materials resulting from nuclear power plant operations. Compliance with these limits is achieved by appropriate combinations of retention (to allow for decay of short-lived isotopes), high efficiency filtration of dusts and activated carbon adsorption of some gases. Continuous monitoring equipment and ports for periodic sampling provide assurance that the emission control systems operate satisfactorily. Spent activated carbon, used filters and other solid wastes generated by the claimed facilities are transported to Hanford for final disposal.

The facilities claimed in this application were installed during construction of the Trojan Nuclear Plant and are currently operated to control emissions from the fuel and auxiliary buildings. Information in the application indicates that ambient levels and emission rates of radioactive materials are well below appropriate NRC limits.

The Department has concluded that the facilities described in Application T-1638 were necessarily installed and are being operated for the purpose of maintaining continuous compliance with NRC imposed limits for emission rates and ambient levels of radioactive materials emanating from the fuel and auxiliary buildings.

There is no return on investment from the facilities claimed in this application.

The application was received on August 23, 1983, additional information was received on October 11, 1983, and the application was considered complete on October 11, 1983.

4. Summation

- a. The facilities were not required to have prior approval to construct or preliminary certification.
- b. The facilities were constructed on or after January 1, 1967, as required by ORS 468.165(1)(a).
- c. The facilities are designed for and are being operated to a substantial extent for the purpose of preventing, controlling, or reducing air pollution.
- d. The facilities are 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% or more.

5. Acting Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$4,774,207 with 80% or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1638.

F.A. SKIRVIN:a
AA3953
(503) 229-6414
October 24, 1983

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Trojan Nuclear Project

Portland General Electric Company
121 S.W. Salmon Street
Portland, OR 97204

Pacific Power & Light Company
920 S.W. Sixth Avenue
Portland, OR 97204

City of Eugene, Acting By and Through
The Eugene Water and Electric Board
P. O. Box 10148
Eugene, OR 97440

The applicant owns and operates a nuclear fueled electrical generating unit at Prescott.

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

2. Description of Claimed Facility

The facility described in this application is a liquid waste radioactivity control system. The facility consists of five subsystems:

1. A clean radioactive waste treatment system;
2. A dirty radioactive waste treatment system;
3. A steam generator blowdown treatment system;
4. A solid radwaste system (to handle waste solids generated by items 1 through 3 above); and
5. A liquid radiation monitoring system.

Notice of Intent to Construct and Preliminary Certification for Tax Credit was not required.

Construction was initiated on the claimed facility March 1971, completed December 1975, and the facility was placed into operation December 1975.

Facility Cost: \$6,927,850 (Accountant's Certification was provided).

The accountant's certification shows a facility cost of \$7,163,131. However, an amendment to the application submitted on October 6, 1983 shows two pieces of equipment which have not been used and will not likely be used for pollution control. The cost of this equipment totals \$235,281 and should be subtracted from the accountant's certified facility cost ($\$7,163,131 - \$235,281 = \$6,927,850$).

3. Evaluation of Application

In accordance with the requirements of the Nuclear Regulatory Commission, the Trojan Nuclear Plant was designed to control releases of radioactive materials to the environment. The claimed facility stores waste water at several locations within the plant where it is checked for radiation levels. If the water is within the NRC requirements, it is discharged to the Columbia River through the main outfall. If the water shows a higher than permissible radiation level, it is treated by filtering followed by ion exchange. The treated water is stored in monitoring tanks where the radiation levels are rechecked. Filters, spent ion exchange resins, and other solid wastes generated as a result of the water treatment requirements are held on-site under controlled conditions until transport for final disposal at Hanford. Experience has shown the system to be operating within the NRC requirements. There has been no return on investment from this portion of the project.

The sources of waste water which are referred to in the application include floor drains near nuclear equipment, miscellaneous radioactive liquid wastes, and secondary loop steam generator blowdown. The radiation control equipment for the primary cooling loop was not included in the application.

4. Summation

- a. Facility was not required to have prior approval to construct or 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. Acting Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$6,927,850 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1639.

L. D. Patterson:g
WG2838
(503) 229-5374
October 12, 1983

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Precision Castparts Corp.
Materials Processing Facility
4600 S.E. Harney Drive
Portland, OR 97206

The applicant owns and operates a materials processing facility to receive, blend, mill, screen and sample dry ceramic material at 6461 S.E. Johnson Creek Blvd., 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 consists of a cartridge type bag filter dust collector with ductwork.

Request for Preliminary Certification for Tax Credit was made on November 12, 1982, and approved on December 28, 1982.

Construction was initiated on the claimed facility on March 3, 1983, completed on May 17, 1983, and the facility was placed into operation on May 17, 1983.

Facility Cost: \$55,007.25 (Accountant's Certification was provided).

3. Evaluation of Application

The claimed facility, consisting of a 16,000 cfm cartridge type bag filter dust collector, silencer, monitoring filter and ductwork, was installed to control emissions from the debagging stations, blender, two ball mills, two screens and two baggers. The dust collector, which collects silica sand and aluminum dust, replaced three small dust collectors which had a combined capacity of 3500 cfm, which was inadequate. The three replaced dust collectors were never certified for tax credit.

The claimed facility has been inspected by Department personnel and has been found to be operating in compliance with Department regulations and permit conditions. It has been reported by Precision Castparts Corporation that the facility, which has a rated efficiency of 99.995%, collects annually 65.5 tons of dust and refractory materials.

All material collected is transported to a landfill for disposal. Since the claimed facility and the replaced system are both re-circulating type systems, no additional heat recovery is realized. Therefore, there is no return on the investment in the claimed facility and 80% or more of the cost is allocable to pollution control.

The application was received on September 30, 1983, and the application was considered complete on September 30, 1983.

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 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% or more.

5. Acting Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$55,007.25 with 80% or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1640.

W. J. FULLER:a
AA3970
(503) 229-5749
October 26, 1983

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Precision Castparts Corp.
4600 S.E. Harney Drive
Portland, OR 97206

The applicant owns and operates a foundry for the production of titanium investment castings at 5001 S.E. Johnson Creek Blvd., Milwaukie, 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 two (2) individual bag filter dust collection systems.

Request for Preliminary Certification for Tax Credit was made on January 7, 1982, and approved on July 27, 1982.

Construction was initiated on the claimed facility in July 1982, completed in December 1982, and the facility was placed into operation in December 1982.

Facility Cost: \$111,947.43 (Accountant's Certification was provided).

3. Evaluation of Application

The claimed facility, consisting of two (2) individual bag filter dust collection systems, are used to control emissions from the investment casting and the grinding/salvage departments as a result of relocating the titanium foundry at the former Ford's Industries Building. A breakdown of the individual systems, their cost, and the areas served, is noted below.

System 1 - \$ 53,582.68 - Investment Casting Department
System 2 - 58,394.75 - Grinding/Salvage Department

Total \$111,977.43

The facility has been inspected by Department personnel and has been found to be operating in compliance with Department regulations and permit conditions. The applicant reports that the following material is collected by the claimed facility and transported to a landfill for disposal.

System 1 - Dust particles and refractory materials - 500 lbs/yr.
System 2 - Dust and heavy metal particles - 1,040 lbs/yr.

Since no material is reclaimed, there is no return on the investment in the facility and 80% or more of the cost of the facility is allocable to pollution control.

The application was received on September 30, 1983 and the application was considered complete on September 30, 1983.

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 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% or more.

5. Acting Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$111,947.43 with 80% or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1641.

W.J. FULLER:a
AA3964
(503) 229-5749
October 25, 1983

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Precision Castparts Corp.
4600 S.E. Harney Drive
Portland, OR 97206

The applicant owns and operates a foundry for the production of titanium castings at 5001 S.E. Johnson Creek Blvd., Milwaukie, 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.

Request for Preliminary Certification for Tax Credit was made on October 21, 1982, and approved on November 12, 1982.

Construction was initiated on the claimed facility in November 1982, completed in December 1982, and the facility was placed into operation in December 1982.

Facility Cost: \$34,627.00 (Accountant's Certification was provided).

3. Evaluation of Application

The claimed facility, consisting of a bag filter dust collection system, was required to control emissions from the sandblast cleaning area as a result of relocating the titanium foundry to the former Ford Industries Building.

The claimed facility has been inspected by Department personnel and has been found to be operating in compliance with Department regulations and permit conditions. Precision Castparts Corporation reports that annual emissions of refractory material and heavy metal particles have been reduced by approximately 373 lbs.

All material collected by the claimed facility is transported to a landfill for disposal. Therefore, there is no return on the investment in the facility and 80% or more of the cost is allocable to pollution control.

The application was received on September 30, 1983 and the application was considered complete on September 30, 1983.

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 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% or more.

5. Acting Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$34,627.00 with 80% or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1642.

W.F. FULLER:a
AA3966
(503) 229-5749
October 25, 1983

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Publishers Paper Co.
Newberg Division
4000 Kruse Way Place
Lake Oswego, OR 97034

The applicant owns and operates a pulp and paper manufacturing facility at Newberg.

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 additional floating aerator. The device is an Ashbrook-Simon Hactly MSAH-75 high speed floating aerator with 75 HP.

Request for Preliminary Certification for Tax Credit was made May 5, 1982, and approved June 9, 1982. Construction was initiated on the claimed facility July 2, 1982, completed July 2, 1982, and the facility was placed into operation September 1, 1982.

Facility Cost: \$20,201 (Accountant's Certification was provided).

3. Evaluation of Application

Publishers Paper Co., Newberg Division, operates a biological waste water treatment system which discharges treated effluent to the Willamette River. Prior to installation of the additional aerator, low dissolved oxygen concentrations were of periodic concern to Publishers Paper and the Department. Low oxygen concentrations can result in excess BOD in the effluent. The additional aerator is now capable of operating whenever another aerator is down for repairs, or as a booster during periods of unusually high oxygen demand. There has been no return on investment from this installation.

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 \$20,201 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1643.

Larry D. Patterson:l
WL2819
(503) 229-5374
October 11, 1983

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Timber Products Company
P. O. Box 1669
Medford
OR 97501

The applicant owns and operates a particleboard manufacturing plant at Medford, 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 wood particle dryer and wet sand filter system constructed as an alternative air emission control strategy. A baghouse as air emission control for two cyclones is also included.

Request for Preliminary Certification for Tax Credit was made on August 3, 1981, and approved on December 7, 1981.

Construction was initiated on the claimed facility in July 1982 and completed in September 1983. The facility began initial operation in July 1983.

Facility Cost: \$2,464,349 (Accountant's Certification was provided). The eligible pollution control facility cost was adjusted to \$2,383,809.

3. Evaluation of Application

Timber Products Company operates a particleboard manufacturing plant on McAndrews Road in Medford. The operation consists of milling and drying of sawdust, wood chips and shavings to three percent or less moisture content for formation into particleboard. Four wood particle dryers were in use which emitted large amounts of particulate matter into the Medford-Ashland airshed.

In 1981, the Environmental Quality Commission adopted specific air emission rules which limited particleboard dryer particulate matter emissions to 0.4 pounds per 1000 square feet of particleboard produced. The existing dryers could not achieve the new standard with the existing emission control equipment.

Timber Products Company submitted a plan to meet the air pollution control requirements by modifying the process so as to allow the utilization of a smaller dryer exhaust gas treatment unit. The construction and operation of this alternative to the more traditional means of installing a large exhaust gas cleaning device on the existing dryers was approved by the Department. The project was cost effective viewed on a capital outlay basis. Financing for the facility was obtained through the sale of Jackson County Pollution Control Bonds.

The primary components in the new facility are two Rader-Thomson rotary dryers heated by Coen Sanderdust burners and four Rader sand-air filter units. This system was designed so that dryer exhaust air flow is about 26 percent less than that of the original dryers. Part of the exhaust air is recirculated to the burner and dryer reducing the volume of exhaust to be treated. The facility has the same raw material handling capacity and utilizes essentially the same electrical drive power requirements as the old system.

Separate from the drying facility, a baghouse was installed to control particulate emissions from the refiner cyclones. This baghouse, included as part of the package proposal by Rader Companies, Inc., replaced an American Air Filter wet scrubber which had provided emission control for part of the original particle dryers.

The total claimed cost of the facilities was \$2,464,349. Included in this cost was a raw material sizing screen, a material conveyor, and two replacement material transfer cyclones (Pallman and process area collection). The screen and conveyor are essential to operation of the new dryers. The material transfer cyclones are peripheral to the drying function and are not eligible for pollution control tax credit certification. The cost attributed to replacement of the cyclones and blow pipes was \$20,540.

The only salvagable items from the original facility are the old Coen burners which the company estimates to have a salvage value of \$60,000. Subtracting the burner salvage value and cyclone costs from the total claimed facility cost leaves a net pollution control tax credit eligibility of \$2,383,809. ($\$2,464,349 - \$60,000 - \$20,540 = \$2,383,809.$)

The company reports no fuel, maintenance, or utility cost savings in operating the new dryer system.

The Department staff has noted the dryer/sand-air filter visible emissions to be well within regulatory limits. However, at the time of this report, compliance with the particulate mass emission standard has not been demonstrated. The most recent source test showed an emission rate of 0.57 pounds per 1000 square feet (lb/1000 sq.ft.) of particleboard (the standard is 0.4 lb/1000 sq.ft.). Modifications have been made to the system and another source test was scheduled for November 3, 1983. The results from this third test have not yet been received. The baghouse controlling the refiner cyclone emissions is in compliance with the regulations.

The installation of the new low airflow dryer facility and Rader sand-air filter emission control system is a cost effective alternative to retrofitting the old existing dryers with the larger control hardware. Quotations from two vendors to furnish and install emission control systems on the old dryer was \$4,395,000 and \$4,851,000. Therefore, the adjusted cost of \$2,383,809 should be certified for pollution control at 80% or more.

The application was received on October 17, 1983, and considered complete on October 21, 1983.

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 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% or more.

Application No. T1644

Page 4

5. Director's Recommendation

Based upon the findings in the Summation, it is recommended that a Pollution Control Facility Certificate bearing the cost of \$2,383,809 with 80% or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1644.

D.K.Neff:ah
(503) 229-6480
October 24, 1983
AZ410

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Publishers Paper Co.
Newberg Division
4000 Kruse Way Place
Lake Oswego, OR 97034

The applicant owns and operates a pulp and paper manufacturing facility at Newberg that produces approximately 1,050 tons per day of newsprint.

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 upgrade of an existing water pollution control facility. The new facility consists of:

- a. An Ashbrook Sludge Belt Press, feed system, polymer facility, and building;
- b. Two 10-inch secondary clarifier solids siphons and drive modifications;
- c. A Black-Clawson centricleaner for removing debris from the primary clarifier underflow; and
- d. Associated plumbing and electrical equipment.

Request for Preliminary Certification for Tax Credit was made January 21, 1982, and approved February 8, 1982. Construction was initiated on the claimed facility February 22, 1982, completed May 28, 1982, and the facility was placed into operation May 28, 1982.

Facility Cost: \$1,714,845 (Accountant's Certification was provided).

The Accountant's Certification was for a cost of \$1,765,527. The applicant noted, however, that several pumps and motors totaling \$50,682 should be deleted ($\$1,765,527 - \$50,682 = \$1,714,845$).

3. Evaluation of Application

During the summer of 1981, the applicant's waste water treatment facilities exceeded the BOD and TSS permit limitations on several occasions. To avoid a recurrence of this situation in 1982, the applicant upgraded the existing treatment system. Prior to modification approximately 35 percent of the No. 1 lagoon effluent entered the No. 2 lagoon where it received further treatment prior to discharge to the Willamette River. The remaining 65% of the No. 1 lagoon effluent entered an activated sludge plant prior to entering the No. 2 lagoon. The system now conveys 100 percent of the No. 1 lagoon effluent through the activated sludge plant prior to entering the No. 2 lagoon. This provides a much higher degree of treatment and has resulted in compliance with the permit limitations. Due to the higher volume of wastes treated in the activated sludge process, the sludge handling facilities had to be expanded to accommodate this change. There has been 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 \$1,714,845 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1645.

Larry D. Patterson:g
WG2884
(503) 229-5374
October 26, 1983

State of Oregon
Department of Environmental Quality

TAX RELIEF APPLICATION REVIEW REPORT

1. Applicant

Publishers Paper Company
Oregon City Division
4000 Kruse Way Place
Lake Oswego, OR 97034

The applicant owns and operates a pulp and paper manufacturing facility at 419 Main Street in Oregon City, 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 variable volume venturi scrubber with a cyclonic separator, fan and 60 foot stack which controls particulate emissions from the sludge dryer.

Request for Preliminary Certification for Tax Credit was made on July 28, 1982, and approved on September 16, 1982.

Construction was initiated on the claimed facility on October 1, 1982, completed on November 8, 1982, and the facility was placed into operation on November 8, 1982.

Facility Cost: \$110,526 (Accountant's Certification was provided).

3. Evaluation of Application

The applicant uses boiler flue gases to dry primary clarifier sludge (mainly paper with some wood fibers) for use as a boiler fuel. Installation of the claimed facility was necessary to comply with emission limits set forth in the applicant's Air Contaminant Discharge Permit. Results of inspections and a source test indicates that the scrubber exhaust is in compliance.

Approximately 245 pounds per day of material (dry basis) is collected in slurry form. The value of this material as a fuel is less than the costs of moisture removal and scrubber operation.

Since no positive economic return is realized from operating the claimed facility, it is concluded that its primary purpose is pollution control and that 80 percent or more of the cost is properly allocable to pollution control.

The application was received on October 8, 1983 and the application was considered complete on October 8, 1983.

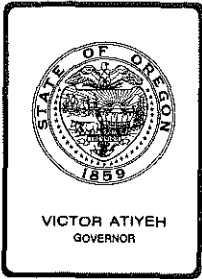
4. Summation

- 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 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 \$110,526 with 80 percent or more allocated to pollution control, be issued for the facility claimed in Tax Credit Application No. T-1646.

F.A. Skirvin:ahc
(503) 229-6414
October 25, 1983
AZ412



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: Acting Director

Subject: Agenda Item No. D , November 18, 1983, EQC Meeting

Request for Authorization to Hold a Public Hearing on
Modifications to Water Quality Rules Related to Surety
Bonds for Construction and Operation of Private Sewerage
Facilities, OAR 340, Division 15.

Background

Oregon Revised Statute (ORS 454.425) requires a surety bond for construction and operation of a privately owned sewage collection, treatment, and/or disposal system. The statute limits the size of bond to a maximum of \$25,000. It authorizes the Environmental Quality Commission to adopt rules exempting certain facilities and to accept a substitution of security when appropriate. The surety bond must remain in effect as long as the facility is privately owned and in use.

The Commission adopted rules in 1975 which exempt the following from the surety bond requirements: (OAR 340-15-015)

- (1) Any subsurface, alternative, or other sewage disposal system which treats not more than 5,000 gallons per day.
- (2) Any subsurface, alternative, or other sewage disposal system, regardless of size, used to serve any food handling establishment, mobile home or recreation park, tourist and traveler's facilities, or other development operated by a public entity or under valid license or certificate of sanitation issued by the State Health Division or Department of Commerce.
- (3) Any sewage collection, treatment, or disposal facility owned and operated by a state or federal agency, city, county, county service district, sanitary authority, sanitary district or other public body, including, but not limited to, a school district or port district.

- (4) Any sewage collection, treatment, or disposal facilities of an industrial plant or commercial development having a valid NPDES Waste Discharge permit or Water Pollution Control Facilities Permit issued by the Department pursuant to ORS 468.740, provided such facilities serve only employees or customers but no permanent residences.

The rules specify the type of security to be (1) a Perpetual Surety Bond issued by a Surety Company licensed by the Insurance Commissioner of Oregon; (2) an insured savings account assigned to the Department; or (3) other security as specifically approved by the Commission.

The rules also establish the amount of the surety bond or other approved equivalent security as \$1.00 per gallon per day of installed sewage treatment or disposal capacity, with a minimum sum not to be less than \$2,000, or shall be of some other sum specifically approved by the Commission, except that in no case shall the maximum sum exceed \$25,000.

There are currently about twenty-five private sewerage facilities with bonds or other approved security. There are about the same number of private facilities which have been exempted under the rules.

The Department has never caused a sewerage system surety bond or other security to be forfeited. The threat of forfeiture may be a deterrent but the amount of the bond today isn't enough to do adequate improvement to a sewerage system if such improvements become necessary. Historically, the requirements to obtain a perpetual bond (non-cancellable) have undoubtedly resulted in abandonment of development plans where the resources of the owner were not adequate to finance the bond and the development.

Problem

The Perpetual Bonds required by EQC rules are very difficult to get. Companies which provide the bonds are unwilling to commit themselves to a non-cancellable, Perpetual Bond unless an equivalent amount of cash is put up by the person wanting the bond. If the owner of the sewerage facility is able to put up a cash deposit, he is "better off" using the assigned savings account alternative to the bond, because the owner receives the benefit of the interest earnings on the account.

For new developments the bond requirement is considered to be a reasonable requirement because the Department needs to have some assurance that there is sufficient financial backing to complete and operate a new project. If the owner can't get a bond or put up the cash deposit, perhaps it's better the development does not take place.

Significant problems arise when someone tries to solve problems at an existing development by building a sewage treatment facility. The owner often cannot get a bond and all their available assets are tied up in construction costs.

Problems also occur when a facility changes ownership and the new owner is unable to get a bond. An example of such is on the Agenda today as Item H.

This problem was brought before the Commission last July. The Department was directed to investigate the possibility of amending the surety bond rules to allow a combination of insured savings account and cancellable bond in those instances where a Perpetual Bond cannot be acquired for existing facilities. We are back today to request authorization for a hearing on proposed rule modifications.

Discussion and Evaluation

One of the most important considerations is to have the assurance that the total amount of the required security is in force during construction and testing of the facility. The proposed rule modification does not allow the bond to be cancelled during construction and one year following construction.

A minimum deposit of 20 percent of the total security amount will be required as an insured savings account. Once the facility has been built, this must be added to each year by an additional 20 percent until the savings account equals or exceeds the total amount of the required security. As the savings account is increased, the surety bond can be equivalently decreased. The total amount of the savings account/bond mixture shall not be less than the total amount of security required by the rules.

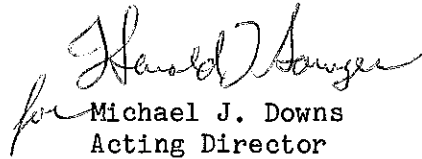
Summation

1. ORS 454.425 requires a surety bond or equivalent security for construction, operation, and maintenance of private sewerage systems.
2. The Commission has adopted rules which allow cash deposits via an assigned savings account in lieu of a bond and exempted certain facilities from the bond requirement.
3. The Department may permit the substitution of other security for the bond upon approval by the Commission, the form of which shall be approved by the Attorney General.
4. Because of the required perpetual nature of the bond, they are very difficult to obtain.
5. At the July EQC meeting, the Commission directed the Department to investigate the possibility of a combination of cash deposit and cancellable bond.
6. Proposed rule modifications have been drafted to provide that flexibility.

EQC Agenda Item No.
November 18, 1983
Page 4

Director's Recommendation

It is recommended that the Commission authorize a hearing to be held on the proposed surety bond rule modifications.


for Michael J. Downs
Acting Director

Attachments: (4)

1. Existing Surety Bond Rules (OAR 340, Division 15)
2. Proposed rule modifications
3. Draft Public Hearing Notice
4. Statement of Need

Charles K. Ashbaker:l
WL2845
229-5325
October 25, 1983

DIVISION 15

SURETY BONDS OR OTHER APPROVED
EQUIVALENT
SECURITY FOR CONSTRUCTION, OPERA-
TION, AND
MAINTENANCE OF SEWAGE COLLECTION,
TREATMENT
OR DISPOSAL FACILITIES

Statement of Purpose

340-15-005 These rules, adopted pursuant to ORS 454.425, prescribe the requirements and procedures for the filing, maintenance, and termination of surety bonds or other approved equivalent security for the construction, operation, maintenance of sewage collection, treatment, or disposal facilities.

Stat. Auth.: ORS Ch.

Hist: DEQ 82, f. 1-30-75, ef. 2-25-75

Definitions

340-15-010 As used in these rules, unless the context requires otherwise:

(1) "Alternative sewage disposal system" has the same meaning as in ORS 454.605(2).

(2) "Commission" means the Environmental Quality Commission.

(3) "Construct" or "Construction" includes installation, repair, and major modification or addition.

(4) "Department" means the Department of Environmental Quality.

(5) "NPDES waste discharge permit" means a waste discharge permit issued in accordance with requirements and procedures of the National Pollutant Discharge Elimination System required by the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500) and of OAR 340-45-005 through 340-45-065.

(6) "Person" means any person as defined in ORS 174.100 but does not include, unless the context specifies otherwise, any public officer acting in his official capacity or any political subdivision, as defined in ORS 237.410.

(7) "Subsurface sewage disposal system" has the same meaning as in ORS 454.605(14).

Stat. Auth.: ORS Ch.

Hist: DEQ 82, f. 1-30-75, ef. 2-25-75; DEQ 99(Temp), f. & ef. 10-1-75; DEQ 102, f. & ef. 12-18-75

Surety Bond Required

340-15-015 (1) Every person proposing to construct facilities for the collection, treatment, or disposal of sewage shall file with the Department a surety bond, or other approved equivalent security, of a sum determined under rule 340-15-025 of these rules.

(2) The following shall be exempt from the provision of section (1) of this rule:

(a) Any subsurface, alternative, or other sewage disposal system or systems designed or used to treat or dispose of a sewage flow of not more than 5,000 gallons (18.925 cubic meters) per day;

(b) Any subsurface, alternative, or other sewage disposal system or systems, regardless of size, used to serve any food handling establishment, mobile home or recreation park, tourist and travelers facilities, or other development operated by a public entity or under a valid license or certificate of sanitation issued by the State Health Division or Department of Commerce;

(c) Any sewage collection, treatment, or disposal facility owned and operated by a state or federal agency, city, county, county service district, sanitary authority, sanitary district, or other public body, including, but not limited to, a school district or port district;

(d) Any sewage collection, treatment, or disposal facilities of an industrial plant or commercial development having a valid NPDES Waste Discharge Permit or Water Pollution Control Facilities Permit issued by the Department pursuant to ORS 468.740 provided such facilities serve only employees or customers but no permanent residences.

Stat. Auth.: ORS Ch.

Hist: DEQ 82, f. 1-30-75, ef. 2-25-75; DEQ 99(Temp), f. & ef. 10-1-75; DEQ 102, f. & ef. 12-18-75

Type of Security

340-15-020 The type of security to be furnished pursuant to ORS 454.425 may be:

(1) Perpetual surety bond executed in favor of the State of Oregon on a form approved by the Attorney General and provided by the Department, such bond to be issued by a Surety Company licensed by the Insurance Commissioner of Oregon;

(2) Insured savings account assigned to the Department with interest earned by such account made payable to the assignor; or

(3) Other security in such form and amount as specifically approved by the Commission.

Stat. Auth.: ORS Ch.

Hist: DEQ 82, f. 1-30-75, ef. 2-25-75

Amount of Bond or Other Security

340-15-025 The amount of the surety bond or other approved equivalent security filed with the Department shall be equal to \$1.00 per gallon per day of installed sewage treatment or disposal capacity with the minimum sum not to be less than \$2,000, or shall be of some other sum specifically approved by the Commission, except that in no case shall the maximum sum exceed \$25,000.

Stat. Auth.: ORS Ch.

Hist: DEQ 82, f. 1-30-75, ef. 2-25-75

Transfer of Facilities

340-15-030 The ownership of the sewage disposal facilities shall not be transferred without the prior written approval of the Department and the surety bond or other approved equivalent security filed pursuant to ORS 454.425 shall remain in full force and effect notwithstanding any subsequent ownership transfer without such prior written approval.

Stat. Auth.: ORS Ch.

Hist: DEQ 82, f. 1-30-75, ef. 2-25-75

Maintenance and Termination of Security

340-15-035 The surety bond or other approved equivalent security filed pursuant to ORS 454.425 shall remain in force and effect until such time as a state or federal agency, city, county, county service district, sanitary authority, sanitary district, or other public body acquires ownership or assumes full liability and responsibility for operation and maintenance of the sewage disposal facilities with the prior written approval of the Department pursuant to rule 340-15-030.

Stat. Auth.: ORS Ch.

Hist: DEQ 82, f. 1-30-75, ef. 2-25-75

Proposed Rule Modifications
OAR 340-15-020

Type of Security

340-15-020 The type of security to be furnished pursuant to ORS 454.425 may be:

(1) Perpetual surety bond executed in favor of the State of Oregon on a form approved by the Attorney General and provided by the Department, such bond to be issued by a Surety Company licensed by the Insurance Commissioner of Oregon;

(2) Insured savings account assigned to the Department with interest earned by such account made payable to the assignor; or

(3) When it is not possible to acquire a perpetual surety bond or insured savings account for the total amount of security as required by OAR 340-15-025, a combination of insured savings account and a non-perpetual surety bond may be approved if the following conditions are met:

(a) Evidence must be provided that a perpetual surety bond cannot be acquired. This evidence shall consist of denial letters from at least two surety companies.

(b) A minimum insured savings account for at least 20% of the total required security must be provided. The remainder of the required security may be covered by a renewable, non-perpetual bond, on a form provided by the Department.

(c) The surety bond shall not be cancellable during construction of the facility and one full year of operation.

(d) Each year thereafter the insured savings account shall be increased by at least 20% of the total required security until such time as the savings account is equal to the total required security. The renewable bond may be decreased equivalent to the savings account increase until it is no longer required.

(e) At all times the combination of the savings account and the surety bond must be equal to the total amount of security required by OAR 340-15-025, unless specifically approved otherwise by the Commission.

[(3)] (4) Other security in such form and amount as specifically approved by the Commission.

Stat. Auth.: ORS Ch.

Hist. DEQ 82, f. 1-30-75, ef. 2-25-75

CKA:1

WL2842

November 18, 1983

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

CHANGE IN SURETY BOND RULES
(OAR 340, Division 15)

Notice Issued:
Hearing Date: 1/4/84
Record Closes: 1/4/84

**WHO IS
AFFECTED:**

The persons who construct or operate private sewage disposal systems with a capacity of more than 5,000 gallons per day.

**WHAT IS
PROPOSED:**

In order to provide a means for persons who are unable to secure a perpetual surety bond for construction and operation of private sewage treatment plants or disposal systems, a modification of the surety bond rules is proposed. The rule modification will allow a combination of insured savings account and cancellable bond for those who cannot provide either a savings account covering the entire amount or a perpetual surety bond. The cancellable bond must eventually be replaced with an insured savings account.

Note: Copies of the rule modification are available upon request.

**HOW TO
COMMENT:**

PUBLIC HEARING

DEQ Headquarters, 14th Floor Conference Room
522 S. W. Fifth Avenue, Portland, Oregon
Wednesday, January 4, 1984 -- 10 a.m.

Written comments should be sent to DEQ Water Quality Division, P.O. Box 1760, Portland, OR 97207. The comment period will end Wednesday, January 4, 1984 at 5 p.m.

Any questions or requests for information should be directed to Kent Ashbaker of the Water Quality Division, 229-5325 or toll free 1-800-452-4011.

**WHAT IS THE
NEXT STEP:**

Once the public testimony has been received and evaluated, the rules will be revised, if necessary, and then go before the Environmental Quality Commission for adoption.

**FISCAL AND
ECONOMIC
IMPACT:**

The rule modification will make it easier for private individuals or small businesses to qualify for the security necessary for the operation of private sewage treatment and disposal facilities. Without this rule modification, many would be unable to qualify.

**LAND USE
CONSISTENCY:**

This rule modification has no direct bearing on land use.

WL2846



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. 1-800-452-4011



Contains
Recycled
Materials

Statement of Need for Rulemaking

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

(1) Legal Authority

ORS 454.425(3) authorizes the Commission to permit the substitution of other security for the surety bond required by ORS 454.425(1).

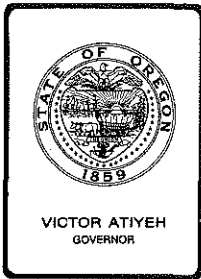
(2) Need for the Rule

Pursuant to ORS 454.425(1), every person proposing to construct or operate sewage disposal facilities must have a perpetual surety bond. However, at the present time, the insurance companies are not willing to provide perpetual bonds for most individuals and small businesses. Therefore, the rules need to be changed to allow for some flexibility on the type of security which is acceptable. This rule change does that.

(3) Principal Documents Relied Upon in This Rulemaking

- a. ORS 454.425
- b. OAR 340, Division 15

CKA:1
WL2847
October 25, 1983



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: Michael J. Downs, Acting Director

Subject: Agenda Item No. E, November 18, 1983, EQC Meeting

Request for Authorization to Conduct a Public Hearing on the Adoption of Hazardous Waste Management Rules, OAR Chapter 340, Divisions 100-125.

Background

Due to a high potential for human health and environmental damage, hazardous waste requires special management controls. This need has been recognized since 1971 when the legislature initially adopted hazardous waste legislation so that today Oregon has a comprehensive hazardous waste management program that controls hazardous waste from the time of generation through transportation, storage, treatment and disposal.

Concurrently, the U.S. Environmental Protection Agency, under Subtitle "C" of the Resource Conservation and Recovery Act (1976), has developed a national program for the management of hazardous waste. The act places hazardous waste management in the federal province but includes provisions for EPA to authorize a state program to operate in lieu of a federally operated program.

The two-step authorization process consists of a period of Interim Authorization during which a state program is to be "substantially" equivalent to the federal program, and Final Authorization for which full equivalence is required.

The Interim Authorization period is designed to give a state time to bring its program into full compliance with the federal program and is scheduled to end nationwide in January, 1985. It consists of two phases, Phase I, the regulation of generators, transporters, and hazardous waste management facilities (treatment, storage or disposal) under federal interim status standards, and Phase II, the authority to permit such facilities under state standards. The DEQ obtained Phase I on July 16, 1981 and initially planned to obtain Phase II during summer, 1983. However, after a careful evaluation of the Department's existing program, it was felt that time and manpower could be used more profitably by bypassing Phase II Interim Authorization and applying directly for Final Authorization. EPA concurred in this decision and an accord was reached whereby the Department agreed to apply for Final Authorization by

April, 1984. Until that time, EPA and DEQ are issuing joint permits to hazardous waste management facilities using the authorities under both RCRA and ORS Chapter 459.

The attached rules are the culmination of a two-year rulemaking process designed to make the state program fully equivalent to and consistent with the federal program. They are based on rules promulgated by EPA but have been modified to more closely serve the needs of the Oregon community.

The main difference between the proposed and the present rules, Divisions 62 and 63, is that the proposed rules spell-out detailed construction, operating and monitoring standards whereas the present rules generally allow the Department to specify those standards on an individual basis (a procedure decidedly unpopular with EPA). Advantages of the proposed rules are that they: (1) more clearly express hazardous waste management requirements to the regulated community and the public alike; and thus (2) tend to promote a more consistent application of those rules. A disadvantage is the surrender of much of the Department's flexibility to tailor its regulations to individual situations.

Several parts of the rules package deserve special mention. One is that the Department is proposing to regulate PCBs as hazardous waste (see rules 340-101-230, Appendix 101.6, 340-102-160 and 200, 340-107-550, 340-111-230, 340-116-170, 340-117-120 and -260, Appendix 117.1 and Appendix 120.5). However, most of these rules are for clarification and the only significant difference from the present management of PCBs would be the requirements that generators manifest PCBs to a disposal site and that persons who store PCBs over 90 days obtain a storage site license.

There is also a ban on the land disposal of certain liquid organic hazardous wastes (rule 340-116-210). The ban is proposed to become effective January 1, 1985 and encompasses wastes which are persistent and toxic and cannot be safely contained in the ground. Many of the wastes are solvents which hasten the deterioration of landfill liners designed to contain them, exacerbating their threat to groundwater and nearby surface waters.

The immediate impact of the ban will be to divert wastes to out-of-state landfills, such as the one in Idaho, and to incinerators, such as those in Arkansas and Texas. There will also be an increase in disposal costs, lesser for the landfill but by a factor of two or three for generators who choose the incineration option. It is estimated that this will result in a 5% increase to the regulated community as a whole.

A similar ban on land disposal is being promulgated by California, New York, Illinois, and Maryland and is part of the RCRA reauthorization bill now in Congress. Although it is our belief that the ban is also supported by the Oregon regulated community, there is no clear consensus on the date of implementation. In an October 4, 1983 public meeting, it was

recommended that implementation be postponed until January 1, 1987. The Department disagrees, believing that January 1, 1985 is sufficient time for industry to modify its waste disposal practices and to rely on more environmentally sound methods such as beneficial use, recycling, treatment and incineration. We are requesting further public and regulated community comment on this issue.

There are several other areas in which the Department is proposing standards which are generally more stringent than those required by EPA:

- o Rule 340-101-130, in effect as ORS 459.410(6) since 1971, identifies virtually all pesticides as hazardous whereas EPA identifies only those mentioned in rules 340-101-140, and -200 to -220.
- o Rule 340-101-210 and -220 regulates wastes and mixtures of wastes down to concentrations of 3% and 10%, respectively, whereas EPA identifies only discarded commercial products or manufacturing intermediates.
- o The small quantity exemptions in Division 101 for other than rule 340-101-210 wastes (which are 2 lb./mo. in both the EPA and state program) range between 10 and 200 lbs./mo. whereas the corresponding EPA small quantity exemptions are 2200 lbs./mo.
- o Rule 340-102-160(3)(d) requires that, after January 1, 1985, generators storing more than 100 drums of waste provide a secondary containment storage area whereas EPA does not.
- o Rules 340-108-210 and -410, currently in effect, requires cash or a cash equivalent for closure and post-closure care of a disposal site whereas EPA accepts several types of financial guarantee devices.
- o Rule 340-112-120 requires tanks installed after January 1, 1985 to provide secondary containment whereas EPA does not.
- o The spill reportable quantities, rule 340-124-100(2)(c) are generally lower than those required by EPA.
- o Division 125 sets operational standards for field users of pesticide which is an area not specifically addressed by EPA.

And finally there are two versions of the manifest system in rule 340-102-250, one assumes that a national manifest will be adopted by early 1984 and the other that it will not. We will select the appropriate version for final rules adoption.

To date, the rulemaking process has included seven public meetings and numerous other discussions with interested parties held over the past two years. The rulemaking was initially announced by distributing several

hundred notices to hazardous waste generators, management facility operators, environmental groups, the media, and other interested parties. In addition, there were press releases before each meeting. For some meetings, as many as 200-300 rules drafts were distributed with meeting attendance generally averaging 15-30 persons.

Because of the more comprehensive nature of the proposed rules, and at the suggestion of the Secretary of State's office, it was decided to repeal the existing hazardous waste management rules, Divisions 62 and 63, and adopt the proposed rules as Divisions 100 to 125, even though many of the present rules are retained in the proposed rules.

Alternatives and Evaluation

Adoption of the proposed rules will enable DEQ to obtain RCRA Final Authorization in accordance with the wishes of the regulated community and the public, as expressed at the November 17, 1980 Interim Authorization hearing, and the 1983 Legislature as expressed in HB 2238 (Section 2):

"The Commission and the Department are authorized to perform or cause to be performed any act necessary to gain Interim and Final Authorization of a hazardous waste regulatory program under the provisions of the federal Resource Conservation and Recovery Act, PL94-580 as amended, and federal regulations and interpretative and guidance documents issued pursuant to PL94-580. The Commission may adopt, amend, or repeal any rule or license, and the Commission or Department may enter into any agreement necessary to implement this section."

Not adopting the rules will preclude our obtaining Final Authorization and require EPA to operate a hazardous waste management program in Oregon. This will subject both the public and the regulated community to the burden of compliance with essentially duplicate programs.

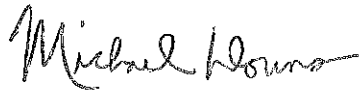
Summation

- (1) The DEQ currently operates a comprehensive management program that controls hazardous waste from the time of generation through transportation, storage, treatment and disposal.
- (2) The current rules are unacceptable to EPA in that they rely too much on best engineering judgment rather than spell out detailed construction, operating, and monitoring standards.
- (3) The DEQ obtained Phase I Interim Authorization on July 16, 1981. Since then, it has been engaged in a public rulemaking process, including seven public meetings, to revise its rules in anticipation of applying for Final Authorization to manage hazardous waste in Oregon.

- (4) The attached rules are believed to be fully equivalent to and consistent with the federal rules as necessary to receive Final Authorization.
- (5) The rules exceed EPA requirements in areas concerning the land disposal of organic liquids, the management of PCBs, the identification of hazardous wastes, the management of small quantities of hazardous waste, drum and tank storage, the reporting of spills, and the financial assurance requirements for hazardous waste disposal sites.

Director's Recommendation

Based upon the summation, it is recommended that the Commission authorize a public hearing to take testimony on the proposed repeal of OAR Chapter 340, Divisions 62 and 63 and the adoption of OAR Chapter 340, Divisions 100 to 125.



Michael J. Downs
Acting Director

Attachments: I. Statement of Need for Rules
II. Statement of Land Use Consistently
III. Draft Public Notice of Rules Adoption
IV. Proposed OAR Divisions 100 to 125

Fred S. Bromfeld:b
229-6210
October 26, 1983
ZB2583

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION
OF THE STATE OF OREGON

IN THE MATTER OF ADOPTING) STATEMENT OF NEED FOR RULES
OAR CHAPTER 340,)
DIVISIONS 100 to 125)

STATUTORY AUTHORITY:

OAR 459.440 requires the Commission to:

- (1) Adopt rules to establish minimum requirements for the treatment storage, and disposal of hazardous wastes, minimum requirements for operation, maintenance, monitoring, reporting and supervision of treatment, storage and disposal sites, and requirements and procedures for selection of such sites.
- (2) Classify as hazardous wastes those residues resulting from any process of industry, manufacturing, trade, business or government or from the development or recovery of any natural resources, which may, because of their quantity, concentration, or physical chemical or infectious characteristics:
 - (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.
- (3) Adopt rules pertaining to hearings, filing of reports, submission of plans and the issuance of licenses.
- (4) Adopt rules pertaining to generators, and to the transportation of hazardous waste by air and water.

A more recent statute (HB 2238, Section 2, 1983 Legislature) authorizes the Commission and the Department to perform any act necessary to gain Final Authorization of a hazardous waste regulatory program under the provisions of the federal Resource Conservation and Recovery Act.

NEED FOR THE RULES:

The management of hazardous waste is currently under both state and federal control but, by being authorized, a state may manage its own hazardous waste in lieu of a federally operated program. The proposed rules, which essentially just elaborate rather than expand the existing State program, are needed to obtain Final Authorization from EPA.

PRINCIPAL DOCUMENTS RELIED UPON:

Existing federal hazardous waste management rules, 40 CFR Parts 260 to 266 and 270, and existing State rules, OAR Chapter 340, Divisions 62 and 63.

FISCAL AND ECONOMIC IMPACT:

Adoption of these rules will increase the present estimated \$4 million Oregon hazardous waste disposal bill by about 5%. This is due primarily to rule 340-116-210 which bans the land disposal of certain organic liquids which pose an inordinate threat of contamination to groundwater. Affected generators will experience a two- to threefold disposal cost increase. However, the small business impact is not expected to be overwhelming as small business generates small quantities of waste.

Rules 340-102-160(3)(d) and 340-112-120 specifying drum and tank storage secondary containment standards, and 340-116-100 requiring synthetic landfill liners will also raise costs, although to an overall lesser extent than the ban. Their small business impact is not expected to be significant; the first two because they deal with the storage of larger quantities of waste and the latter because costs will be incremental and in proportion to the amount of waste a generator disposes.

FSB:b
9/28/83

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION
OF THE STATE OF OREGON

IN THE MATTER OF ADOPTING) LAND USE CONSISTENCY
OAR CHAPTER 340,)
DIVISIONS 100 to 125)

The proposal described appears to be consistent with all statewide planning goals. Specifically, the rules comply with Goal 6 because they would insure the safe management of hazardous waste transportation, storage, treatment, and disposal, and thereby provide protection for air, water, and land resource quality.

The rules comply with Goal 11 by promoting hazardous waste reduction at the point of generation, beneficial use, recycling, treatment, and by controlling disposal site operations. They also intend to assure that current and long-range waste disposal needs will be accommodated.

Public comment on this proposal is invited and may be submitted in the manner described in the accompanying Public Notice of Rules Adoption.

It is requested that local, state and federal agencies review the proposal and comment on possible conflicts with their programs affecting land use and with statewide planning goals within their jurisdiction. The Department of Environmental Quality intends to ask the Department of Land Conservation and Development to mediate any apparent conflicts thereby brought to its attention.

After public hearing, the Commission may adopt permanent rules identical to the proposal, adopt modified rules on the same subject matter, or decline to act. The Commission's deliberation should come on February 17, 1984 as part of the agenda of a regularly scheduled Commission meeting.

A CHANCE TO COMMENT ON...

Hazardous Waste Management Rules

Date Prepared: November 18, 1983
Hearing Date: January 5, 1984
Comments Due: January 5, 1984

**WHO IS
AFFECTED:**

Adoption of the rules will affect all persons who manage hazardous waste, including generators, transporters, and owners and operators of treatment, storage, and disposal facilities. However, for the most part, the rules are based upon federal rules which, if not adopted by DEQ, will be implemented by EPA.

**WHAT IS
PROPOSED:**

The DEQ proposes to adopt as OAR Chapter 340, Divisions 100 to 125, a substantially more detailed set of rules for hazardous waste management than now exists. This is primarily to fulfill an EPA prerequisite for receiving RCRA Final Authorization, but the detailing of regulations for managing hazardous waste should also be of benefit both to the regulated community and the public.

**WHAT ARE THE
HIGHLIGHTS:**

- o Adoption of the rules, and subsequently obtaining Final Authorization, will enable the DEQ to be solely responsible for managing hazardous waste in Oregon. The need to keep this responsibility in local hands has been expressed by the Legislature, the regulated community, and the public.
- o The rules include a ban on the landfilling of certain liquid hazardous wastes which have the greatest tendency to migrate out of a landfill to groundwater. The wastes selected are persistent and toxic and cannot be safely contained in the ground. The Department believes that only by eliminating burial of these wastes and directing industry to rely on safer disposal methods such as beneficial use, recycling, treatment and incineration can we avert their threat to groundwater and nearby surface waters.
- o The rules propose to regulate PCBs as a hazardous waste. Although this is not done at the federal level because PCB is regulated under another Act, it is believed that the hazards associated with PCB management make imperative that it be regulated no less stringently than are other hazardous wastes.



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 ~~1-800-452-7818~~ and ask for the Department of Environmental Quality.

1-800-452-4011



- o The rules exceed EPA requirements in areas such as the number of wastes identified as hazardous, the management of small quantities of hazardous waste, standards for drum and tank storage secondary containment, and the imposition of more rigid financial assurance requirements for hazardous waste disposal sites.

**HOW TO
COMMENT:**

Copies of the proposed rules can be obtained from:

Fred Bromfeld
Hazardous Waste Operations
Department of Environmental Quality
P.O. Box 1760
Portland, OR 97207
Telephone: 229-6210

Written comments should be sent to the same address by January 5, 1984. Verbal comments may be given during the public hearing scheduled as follows:

9:00 a.m.
Thursday, January 5, 1984
Room 1400
522 S.W. 5th Avenue
Portland, OR 97204

**WHAT IS THE
NEXT STEP:**

After the public hearing, the Environmental Quality Commission may adopt rules identical to those proposed, modify the rules, or decline to act. The Commission's deliberations should come on February 17, 1984, as part of the agenda of a regularly scheduled Commission meeting.

ATTACHMENTS:

Statement of Need for Rules (including Fiscal Impact)
Statement of Land Use Consistency

ZB2583.3

DIVISION 100
HAZARDOUS WASTE MANAGEMENT
Introduction

DRAFT

Scope and Purpose

340-100-010 The Department finds that increasing quantities of hazardous waste are being generated in Oregon which, without adequate safeguards, can create conditions that threaten public health and the environment. It is therefore in the public interest to establish a comprehensive program to provide for the safe management of such waste.

The management program contained in Divisions 100 to 125 endeavors to control hazardous waste from the time of generation through transportation, storage, treatment and disposal. Waste reduction at the point of generation, beneficial use, recycling and treatment are given preference to land disposal. To this end, the Department intends to minimize the number of disposal sites and to tightly control their operation.

Authority

340-100-020 The rules in this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-100-030 As used in these rules unless otherwise specified:

(1) "Active portion" means that portion of a site where treatment, storage or disposal operations are being conducted.

"Aeration" means a specific treatment for decontaminating an empty volatile substance container consisting of removing the closure and placing in an inverted position for at least 24 hours.

"Aquatic LC₅₀" (median aquatic lethal concentration) means that concentration of a substance which is expected in a specified time to kill 50 percent of an indigenous aquatic test population (i.e., fish, insects or other aquatic organisms). Aquatic LC₅₀ is expressed in milligrams of the substance per liter of water.

"Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs; i.e., a significant saturated zone.

"Beneficiation" means the upgrading of ores and minerals by purely physical processes (e.g., crushing, screening, settling, flotation, dewatering and drying) with the addition of other chemical products only to the extent that they are a non-hazardous aid to the physical process (such as flocculants and deflocculants added to a froth-flotation process).

"Beneficial use" means the return of hazardous waste without processing to the economic mainstream as a substitute for raw materials in an industrial process or as a commercial product.

"Boiler" means an enclosed device using controlled flame combustion and having the following design characteristics:

(a) The device has provision for heat recovery; and

(b) The combustion chamber and heat recovery section are of integral design, i.e., they are formed physically into one manufactured or assembled unit. (A facility in which the furnace or combustion chamber and heat recovery section are joined by ducts or connections carrying flue gas is

not integrally designed); and

(c) Significant heat recovery takes place in the combustion chamber section by radiant transfer of heat to the transfer medium.

"Certification" means a statement of professional opinion based upon knowledge and belief.

"Closed portion" means that portion of a facility which an owner or operator has closed in accordance with the approved facility closure plan and all applicable closure requirements.

"Collection" or "storage" means the containment of hazardous waste for a temporary period of time, in such a manner as not to constitute disposal of such waste.

"Confined aquifer" means an aquifer bounded above and below by impermeable beds or by beds of distinctly lower permeability than that of the aquifer itself, e.g., an aquifer containing confined groundwater.

"Container" means any portable device in which a substance is stored, transported, treated, disposed or otherwise handled.

"Contingency plan" means a document delineating an organized, planned, and coordinated course of action to be followed in case of a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

"De minimus losses" means those minor losses from normal material handling (e.g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers.

"Department" means the Department of Environmental Quality.

"Dermal LD₅₀" (median dermal lethal dose) means a measure of dermal penetration toxicity of a substance for which a calculated dermal dose is expected, in a specified time, to kill 50 percent of a population of experimental laboratory animals. Dermal LD₅₀ is expressed in milligrams of the substance per kilogram of body weight.

"Designated facility" means a hazardous waste treatment, storage, or disposal facility which has received a state or EPA license or permit, or a facility with EPA interim status.

"Dike" means an embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, solids or other substances.

"Dilution" means the addition of any substance to a hazardous waste to form a mixture that is not substantially the result of a chemical reaction.

"Director" means the Director of the Department of Environmental Quality.

"Dispose" or "Disposal" means the discharge, deposit, injection, dumping, spilling, leaking or placing of any hazardous waste or hazardous substance into or on any land or water so that the hazardous waste or hazardous substance may enter the environment or be emitted into the air or discharged into any waters of the State as defined in ORS 468.700.

"Domestic use" means use in or around homes by the homeowner.

"Elementary neutralization facility" means a device which:

(a) Is used for neutralizing waste which is hazardous waste only because it meets the characteristic of corrosive, rule 340-101-110, or is listed in rule 340-101-220 solely because it possesses this characteristic; and

(b) Meets the definition of tank, container, transport vehicle or vessel.

"Empty container" means a container from which:

(a) All the contents have been removed that can be removed using the practices commonly employed to remove materials from that type of container; and

(b)(A) No more than one inch of residue remains on the bottom of the container; or

(B) No more than 3% of the total capacity of the container remains in the container if the container is less than or equal to 110 gallons in size; or

(C) No more than 0.3% of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size; or

(D) If the material is a compressed gas, the pressure in the container is atmospheric.

"EPA" means the U.S. Environmental Protection Agency.

"EPA identification number" means the number assigned by EPA to each hazardous waste generator, transporter, and management facility.

"Existing portion" means any hazardous waste management facility or portion thereof whose plans have been approved prior to the effective date of these rules.

"Facility" means a contiguous area of land or connected pieces of equipment on or in which waste is placed. A facility is the largest unit in which there is a significant likelihood of mixing of waste constituents. Usually this is due to the fact that each facility is subject to a uniform set of management practices (e.g., one liner and leachate collection and removal system).

"Food-chain crops" means crops grown for human consumption and crops grown for feed for animals which are, or whose products are, consumed by humans.

"Freeboard" means the vertical distance between the useable top of a tank or surface impoundment dike, and the surface of the waste contained therein.

"Free liquid" means that liquid which readily separates from the solid portion of a waste under ambient temperature and pressure. Free liquid is determined by placing a 100 ml. representative sample of the waste in a 400 micron, conical paint filter for five minutes. This filter is a standard paint filter which is commonly available at hardware and paint stores. The filter is to be supported by a funnel on a ring stand with a beaker below to capture any free liquid that passes through the filter. If any free liquid falls into the beaker, the waste is considered to hold free liquid.

"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.

"Groundwater" means water in the aquifer nearest the natural ground surface as well as in lower aquifers that are hydraulically interconnected with this aquifer within the site's property boundary.

"Hazardous constituents" means constituents identified in Appendix 101.3 which are reasonably expected to be in, or derived from, hazardous waste.

"Hazardous substance" means any substance intended for use which may also be identified as hazardous pursuant to Division 101.

NOTES: (1) For purposes of compliance with these rules, quantity calculations involving hazardous substances shall be made in a manner

analogous to that in the note following section () of this rule.

(2) These substances may include but are not necessarily the same as those identified by DOT in 49 CFR 172.101.

"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 subsection (a), (b) or (c) of this section 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, 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 the 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 subsections (a) and (b) of this section.

NOTE: For purposes of compliance with these rules, quantity calculation involving hazardous waste shall be made independent of the concentrations of the hazardous components. For example, rule 340-101-200 identifying waste containing a concentration of 3% or greater acrolein (P003) as hazardous with a small quantity exemption of 2 lb/mo. shall be interpreted as requiring the management of 2.1 lb/mo. of a waste containing acrolein as hazardous whether the concentration of acrolein is 3, 30 or 100%.

"Hazardous waste collection site" means the geographical site upon which hazardous waste is stored.

"Hazardous waste number" means the number assigned to each characteristic or listed hazardous waste.

"Incinerator" means an enclosed device using controlled flame combustion, the primary purpose of which is to thermally break down hazardous waste. Examples of incinerators are rotary kiln, fluidized bed, and liquid injection incinerators.

"Incompatible waste" means a hazardous waste which is unsuitable for:

(1) Placement in a particular container, tank, surface impoundment, waste pile or other facility because it may cause corrosion or decay of containment materials or otherwise cause the containment to fail; or

(2) Commingling with another waste or material under uncontrolled conditions because of the potential for producing excessive heat or

pressure, a fire or explosion, violent reaction, toxic dusts, mists, fumes, or gases, or flammable fumes or gases.

"Industrial furnace" means a facility that is an integral component of a manufacturing process using flame combustion or elevated temperature to accomplish recovery of materials or energy. Examples of industrial furnaces are cement kilns, lime kilns, aggregate kilns, phosphate kilns, blast furnaces, smelting furnaces, methane reforming furnaces, combustion devices used in the recovery of sulfur values from spent sulfuric acid, and pulping liquor recovery furnaces. The Department may add other facilities to this list on the basis of one or more of the following factors:

(a) The facility is designed and used primarily to accomplish recovery of material products;

(b) The facility burns secondary materials as ingredients in an industrial process to make a material product;

(c) The facility burns secondary materials as effective substitutes for raw materials in processes using raw materials as principal feedstocks;

(d) The facility burns raw materials to make a material product;

(e) The facility is in common industrial use to produce a material product; and

(f) Other factors, as appropriate.

"Inhalation LC₅₀" (median inhalation lethal concentration) means the inhalation concentration of a substance that is expected in a specified time to kill 50 percent of a population of experimental laboratory animals. Inhalation LC₅₀ is expressed in milligrams per liter of air.

"Inner liner" means a continuous layer of material placed inside a tank or container to protect it from corrosion or decay or otherwise to fail.

"International shipment" means the transportation of hazardous waste into or out of the United States.

"Jet rinsing" means a specific treatment for an empty container using the following procedure:

(a) A nozzle is inserted into the container such that all interior surfaces of the container can be rinsed; and

(b) The container is thoroughly rinsed using an appropriate solvent.

"Landfill" means a disposal facility where hazardous waste is placed into or on land, and at which waste may remain after closure.

"Land treatment facility" means a facility at which specific hazardous wastes are applied onto or incorporated into the soil surface for the purpose of biologically degrading the waste to the maximum extent possible.

"Leachate" means any liquid, including any suspended substances in the liquid, that has percolated through or drained from hazardous waste.

"Liner" means a continuous layer of natural or man-made materials, beneath or on the sides of a surface impoundment, waste pile or landfill, which restricts the downward or lateral escape of hazardous waste, hazardous constituents, or leachate.

"Management" or "hazardous waste management" means the systematic control of the source separation, storage, transportation, treatment, beneficial use, recycle and disposal of hazardous waste.

"Management facility" means a hazardous waste collection, treatment or disposal facility; or the solid waste landfill that the Department has authorized by permit to dispose of a specified hazardous waste pursuant to Division 120.

"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.

"Manifest document number" means the serially increasing number assigned to the manifest by the generator for recording and reporting purposes.

"Multiple rinsing" means a specific treatment for an empty container repeating the following procedure a minimum of three times:

(a) An appropriate solvent is placed in the container in an amount equal to at least 10% of the container volume;

(b) The container is agitated to rinse all interior surfaces; and

(c) The container is opened and drained, allowing at least 30 seconds after drips start.

"Municipality" means a city, town, county, district, association or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes or other wastes.

"100-year flood" means a flood that has a one percent chance of being equalled or exceeded in any given year.

"100-year floodplain" means any land area which is subject to a one percent or greater chance of flooding in any given year from any source.

"On-site" means on the site of waste generation. Geographically contiguous property which may be divided by public or private right-of-way is also on-site, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing as opposed to going along, the right-of-way. Non-contiguous properties owned by the same person but connected by a right-of-way which he controls and to which the public does not have access, is also considered on-site property.

"Operator" means the person responsible for the overall operation of a facility.

"Oral LD₅₀" (median oral lethal dose) means the oral dose of a substance that is expected to kill 50 percent of a population of experimental laboratory animals within a specified time. Oral LD₅₀ is expressed in milligrams of the substance per kilogram of body weight.

"Other incident" includes but is not limited to the actual or imminent possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fires, explosion or other discharge of waste which may endanger public health or the environment.

"Oxidizer" means any substance such as a chlorate, permanganate, peroxide, or nitrate, that yields oxygen readily or otherwise acts to stimulate the combustion of organic matter.

"Partial closure" means the closure of a discrete facility in accordance with the applicable closure requirements of Division 108. For example, partial closure may include the closure of a trench or surface impoundment while other facilities on the same site continue in operation or will be placed in operation in the future.

"PCB" means the biphenyl molecule that has been chlorinated to any degree or any combination of substances which contains such substance. As used in these rules, it refers to any chemical substance or combination of substances that contains 50 ppm (on a dry weight basis) or greater of PCB.

"PCB article" means any manufactured article, other than a PCB container, that contains PCB and whose surface(s) has been in direct contact with liquid PCB at a concentration of 500 ppm or greater. Types of PCB articles include transformers, capacitors, pumps, pipes, hydraulic machines and other electrical equipment such as motors, circuit breakers, reclosers, voltage regulators, electromagnets and cable.

"PCB 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:

(a) A "small capacitor" is a capacitor which contains less than 3 lbs. of dielectric fluid. 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 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.

(b) A "large capacitor" is a capacitor which contains 3 lbs. or more of dielectric fluid.

"PCB-contaminated article" means any manufactured article, other than a PCB-contaminated capacitor or container, that contains liquid with a concentration of 50 ppm or greater but less than 500 ppm PCB and whose surface has been in direct contact with such liquid. Types of PCB-contaminated articles include transformers, pumps, pipes, hydraulic machines and other electrical equipment such as motors, circuit breakers, reclosers, voltage regulators, electromagnets and cable. Oil-filled electric equipment other than circuit breakers, reclosers and cable whose PCB concentration is unknown must be assumed to be PCB-contaminated articles.

"PCB transformer" means any transformer that contains 500 ppm or greater PCB.

"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.

"Personnel" or "facility personnel" means all persons who work at or oversee the operation of a hazardous waste management facility.

"Pesticide" means 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 defoliant, desiccants, fungicides, herbicides, insecticides and nematocides as defined by ORS 634.006.

"Pile" means any noncontainerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage.

"Point source" means any discernible, confined, and discrete conveyance, including, but not limited to a pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are discharged. This term does not include return flows from irrigated agriculture.

"Process wastewater" means any water or water containing minor quantities of process solutions which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, commercial product or waste product.

"Publicly owned treatment works" or "POTW" means any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a State or municipality. This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

"Recycle" means the processing of hazardous waste so as to return it to the economic mainstream as a substitute for raw materials in an industrial process or as a commercial product.

"Representative sample" means a sample of a whole (e.g., waste pile, surface impoundment, groundwater) which can be expected to exhibit the

average properties of the whole.

"Run-off" means any rainwater, leachate or other liquid that drains over land from any part of a facility.

"Run-on" means any rainwater, leachate or other liquid that drains over land onto any part of a facility.

"Site" means all contiguous land, structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A site may consist of several treatment, storage, or disposal facilities (e.g., one or more landfills, surface impoundments, or combinations of them). Two or more parcels of real property which are geographically contiguous and are divided only by a right-of-way are considered a single site.

"Spill" means the accidental spilling, leaking, pumping, pouring, emitting, or dumping of hazardous wastes or hazardous substances into or on any land or water.

"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.

"Storm" means an atmospheric disturbance characterized by strong winds, rain, snow, or other precipitation, and often by lightning, that, because of its intensity or duration, may threaten damage to a waste management facility.

"Surface impoundment" means a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds and lagoons.

"Tank" means a stationary device, designed to contain hazardous waste, which is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

"Totally enclosed treatment facility" means a facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment. An example is a pipe in which waste acid is neutralized or a distillation unit that is an integral part of a metals cleaning line.

"Transfer facility" means any transportation-related facility including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous waste are held during the normal course of transportation.

"Transport vehicle" means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, railroad freight car, etc.) is a separate transport vehicle.

"Transportation" means the movement of hazardous waste by air, rail, highway or water.

"Transporter" means any person engaged in the transportation of hazardous waste by any means.

"Treatment" means any method, technique, or process, including 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 non-hazardous, safer for transport, amenable for recovery, amenable for storage, or reduced in volume.

"Treatment zone" means that portion of the unsaturated zone of a land

treatment facility below and including the land surface in which the conditions necessary for effective degradation or immobilization of hazardous constituents are maintained.

"Unsaturated zone" means the zone between the land surface and groundwater; i.e., the vadose zone.

"Vessel" includes every description of watercraft, used or capable of being used as a means of transportation on water.

"Volatile hazardous waste" means any hazardous waste which contains volatile organic components in excess of 3% as determined by a method approved by the Department.

"Washout" means the movement of hazardous waste from the active portion of a facility as a result of flooding.

"Wastewater treatment facility" means a device which:

(a) Receives and treats or stores process wastewater which is a hazardous waste or generates a sludge which is a hazardous waste;

(b) Is part of a facility subject to regulation under Section 402 or 307(b) of the Clean Water Act or to a WPCF permit.

(c) Meets the definition of "tank."

"Water Pollution Control Facility" (WPCF) permit means a State permit issued to wastewater treatment facilities which have eliminated discharge.

"Water (bulk) shipment" means the bulk transportation of hazardous waste which is loaded or carried on board a vessel without containers or labels.

"Well" means any shaft or pit dug or bored into the earth, generally of a cylindrical form, and often walled with bricks or tubing to prevent the earth from caving in.

Table of Contents

340-100-040 (1) The following divisions comprise the hazardous waste management program:

<u>Division</u>	<u>Subject</u>
100	Introduction
101	Identification of Hazardous Wastes
102	Generators
103	Air & Water Transporters
104	Reserved
105	Reserved
106	Management Facilities: General Operating Standards
107	MF: Environmental Monitoring
108	MF: Closure, Post-Closure & Liability
109	Reserved
110	Reserved
111	MF: Container Storage
112	MF: Tanks
113	MF: Surface Impoundments
114	MF: Waste Piles
115	MF: Land Treatment
116	MF: Landfills
117	MF: Incinerators
118	Reserved
119	Reserved
120	MF: Licensing Procedures

121	Reserved
122	MF: License-by-Rule
123	Reserved
124	Spills and Other Incidents
125	Pesticide Users

(2) The Codes of Federal Regulations referenced in Divisions 100 to 125 are Title 40, U.S. Environmental Protection Agency, and Title 49, U.S. Department of Transportation, in effect on November 18, 1983.

Confidentiality

340-100-050 (1) Records, reports, and information submitted pursuant to these rules may be claimed as confidential by the submitter. Such claim must be asserted at the time of submission by stamping the words "confidential business information" or the equivalent on each page containing such information. If no claim is made at the time of submission, the Department may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with ORS 459.460 and ORS Chapter 192.

(2) Records, reports, and information submitted pursuant to these rules shall be made available to EPA upon request. If the records, reports, or information has been submitted under a claim of confidentiality, the State shall make that claim of confidentiality to EPA for the requested records, reports or information. The federal agency shall treat the records, reports or information that is subject to the confidentiality claim as confidential in accordance with applicable federal law.

NOTE: It is suggested that claims of confidentiality be restricted to that information considered absolutely necessary and that such information be clearly separated from the remainder of the submission.

(3) Claims of confidentiality for the name and address of any license applicant or licensee will be denied.

DIVISION 101
HAZARDOUS WASTE MANAGEMENT
Identification of Hazardous Wastes

Purpose

340-101-010 The purpose of this division is to identify those wastes which are subject to regulation as hazardous waste.

Authority

340-101-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.410 and -.440; and 183.

Definitions

340-101-030 The terms used in this division are defined by rule 340-100-030 and:

(1) A waste is a hazardous waste if it is not excluded from regulation under section (2) of this rule and:

(a) It exhibits any of the characteristics identified by rules 340-101-100 to -140; or

(b) It is listed in rules 340-101-200 to -220 and has not been exempted pursuant to rule 340-101-500; or

(c) It is an empty container identified by rule 340-101-300; or

(d) It is formed by intentionally mixing hazardous waste and other wastes or substances with the primary result being dilution of the hazardous waste.

(2) The following wastes are not hazardous wastes:

(a) Domestic sewage or any mixture of domestic sewage and other wastes that pass through a sewer system to a publicly-owned treatment works;

(b) Industrial wastewater discharges that are point sources subject to regulation under Section 402 or 307(b) of the Clean Water Act or to a State WPCF permit;

NOTE: This exclusion applies only to the actual discharge and not to the wastewater while it is being collected, stored or treated before discharge, or to the sludges that are generated by such treatment.

(c) Industrial wastewater at any point before discharge if the discharge is subject to the regulation listed in subsection (2)(b) of this rule and the wastewater contains:

(A) Any one or mixtures of the spent solvents tetrachloroethylene, trichloroethylene, or carbon tetrachloride, if the amount discharged divided by the average weekly flow of wastewater does not exceed 1 ppm; or

(B) Any one or mixtures of the spent solvents methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, or chlorofluorocarbons, if the amount discharged divided by the average weekly flow of wastewater does not exceed 25 ppm; or

(C) Hazardous Waste No. K050; or

(D) De minimus losses of hazardous waste from the use of commercial products or raw materials; or

(E) Hazardous wastes discharged from a laboratory provided that the annual flow of laboratory wastewater does not exceed 1% of the plant's total wastewater, or provided the wastes' annual average concentration does

not exceed 1 ppm of the plant's total wastewater.

- (d) Irrigation return flows;
 - (e) Ores subjected to in-situ mining techniques which are not removed from the ground as part of the extraction process;
 - (f) Wastes generated by the growing and harvesting of agricultural crops or the raising of animals, including animal manures, and which are returned to the soils as fertilizers;
 - (g) Fly ash, bottom ash, slag, and flue gas emission control wastes generated primarily from the combustion of agricultural or silvicultural biomass or coal or other fossil fuels;
 - (h) Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy;
 - (i) Wastes generated by the extraction and beneficiation of ores and minerals, including coal, phosphate rock and uranium ore;
 - (j) Cement kiln dust;
 - (k) Wastes which fail the EP toxicity test, rule 340-101-140, or are listed in rule 340-101-220 only because chromium is present, if it can be shown that:
 - (A) The chromium is almost exclusively trivalent chromium;
 - (B) The waste is generated from an industrial process which uses trivalent chromium and the process does not generate hexavalent chromium; and
 - (C) The waste will be managed in a non-oxidizing environment;
 - (l) Discarded wood or wood products which are hazardous only because they fail the EP toxicity test for arsenic, if the waste is generated by persons who utilize the wood or wood products for their intended end use;
 - (m) Spent pickle liquor (Hazardous Waste No. K062) which is used in wastewater treatment at a facility holding an NPDES or WPCF permit, or which is being accumulated, stored, or physically, chemically or biologically treated before such use;
 - (n) Source, special nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq., and
 - (o) Waste motor and petroleum-based lubricating oils (non-halogenated) that are beneficially used or recycled.
- (3) A waste identified as hazardous pursuant to two or more rules shall be managed in accordance with the rule applying the most stringent controls.
- (4) A hazardous waste which is generated in a commercial product or raw material storage tank, transport vehicle or vessel, or pipeline, in a manufacturing process facility or an associated non-waste-treatment manufacturing facility, or in a licensed-by-rule management facility is not subject to regulation as a hazardous waste until it exits the facility in which it was generated, unless the facility is a surface impoundment, or unless the hazardous waste remains in the facility for more than 90 days after the facility ceases to be used for the manufacture, storage, or transportation of commercial products or raw materials.
- (5) Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any hazardous substance or hazardous waste is a hazardous waste and shall be managed pursuant to Division 124, or, for owners or operators of hazardous waste management facilities, Division 106.
- (6)(a) A waste generated by the treatment, storage or disposal of a waste identified as hazardous pursuant to the characteristics of rules 340-101-100 to -140 is a hazardous waste unless it no longer meets those

characteristics.

(b) A waste generated by the treatment, storage or disposal of a waste listed as hazardous pursuant to rules 340-101-200 to -220 is a hazardous waste unless it is delisted pursuant to rule 340-101-500.

Applicability

340-101-040 (1) The rules of this division apply to all persons who, by virtue of ownership, management or control, cause or allow to be caused the creation of a waste.

(2) A person shall determine if his waste is subject to management as a hazardous waste by the following procedure:

(a) Determine if the waste is excluded from regulation by rule 340-101-030(2). If it is not,

(b) Determine if the waste is listed as a hazardous waste in rules 340-101-200 to -240. If it is not,

(c) Determine if the waste is identified by characteristic in rules 340-101-100 to -140 by either:

(A) Testing the waste according to the methods set forth in those rules, or according to an equivalent test method approved by DEQ; or

NOTE: The DEQ will not consider approving a test method until it has been approved by EPA.

(B) Applying knowledge of the hazard characteristic of the waste in light of the raw materials or processes used.

(d) Determine if the waste is excluded from regulation and managed as a small quantity pursuant to rule 340-101-350; or

(e) Determine if the waste is to be beneficially used or recycled and subject to regulation under rule 340-101-050.

Beneficial Use and Recycle

340-101-050 (1) A hazardous waste that is beneficially used or recycled on-site is not subject to regulation as a hazardous waste provided the generator:

(a) Registers in accordance with rule 340-102-060;

(b) Stores the waste in tanks in accordance with the requirements of Division 112;

(c) Stores the waste in containers in accordance with 49 CFR Parts 173, 178 and 179 or as otherwise permitted by DOT; and

(d) Prepares a contingency plan in accordance with rule 340-106-400.

(2) Except as may be permitted by rule 340-102-150(1), a hazardous waste that is beneficially used off-site is subject to regulation as a hazardous waste until it arrives at the site of the beneficial user.

(3) Except as may be permitted by rule 340-102-150(1), a hazardous waste that is recycled off-site is subject to regulation as a hazardous waste until the end of its treatment in the recycle facility that causes it to become a commercial product or raw material.

(4) Notwithstanding any other provision of this rule, the following activities and wastes are subject to regulation under Divisions 106 to 122:

(a) The waste is treated or stored in a surface impoundment or a waste pile (excluding those piles subject to rule 340-114-040(2));

(b) The waste is accumulated without a sufficient quantity being used. Such accumulation will be said to occur if, during a one-year period beginning January 1, 1984 or at the start of accumulation, the amount of

material that is used does not equal at least 75% of the amount accumulated at the beginning of the period. The Department may grant a six-month extension due to unforeseen, temporary, or uncontrollable circumstances;

(c) The waste is accumulated speculatively, that is, if it is potentially usable but is held without having any known market or disposition, or is held without having any feasible means of use;

(d) The waste is used in a manner that constitutes disposal, as-is or after simple mixing, which is not ordinarily done with similar commercial products;

(e) The waste is burned in a boiler or industrial furnace and is identified as hazardous for any reason other than being ignitable, corrosive, or reactive (as defined by rule 340-101-120(a), (c) or (d));

(f) The waste is burned in an incinerator;

(g) The waste is identified as Nos. F020, F021, F022, or F023;

(h) The waste is spent lead-acid batteries; or

(i) The Department has reason to believe that the waste may be hazardous to human health and the environment when used in the manner proposed.

Waste Export and Import

340-101-080 (1) Persons importing hazardous waste from a foreign country shall comply with the generator requirements of Division 102, except that, with regard to the manifest of rule 340-102-250:

(a) In place of the generator's name, address and EPA identification number, the name and address of the foreign generator and the importer's name, address and EPA identification number must be used; and

(b) In place of the generator's signature on the certification statement, the U.S. importer or his agent must sign and date the certification and obtain the signature of the initial transporter.

(2) Persons exporting hazardous waste to a foreign country shall comply with the federal rules for international shipments in 40 CFR 262.50(b) and (c):

Characteristics of a Hazardous Waste

340-101-100 (1) A waste is an ignitable (I) hazardous waste if a representative sample of the waste (see Appendix 101.1) exhibits any of the following properties:

(a) It is a liquid that has a flash point less than 140° F as determined by the Pensky-Martens Closed Cup Tester (ASTM D93-79 or -80) or an equivalent test method approved by DEQ; or

(b) It is a flammable compressed gas as defined by 49 CFR 173.300(b);
or

(c) It is a class C explosive as defined by 49 CFR 173.100; or

(d) It is a solid that, under conditions incident to its management, is liable to cause fires through friction, absorption of moisture, or spontaneous chemical change; and when ignited burns so vigorously and persistently as to create a hazard.

(2) Hazardous waste number: D001

(3) Small quantity exemption (see rule 340-101-350 for management):
25 lb/mo.

NOTE: 49 CFR refers to the rules of the U.S. Department of Transportation.

340-101-110 (1) A waste is a corrosive (C) hazardous waste if a representative sample of the waste:

(a) As a liquid or as a saturated [water] solution of a solid has a pH of 2 or less or of 12.5 or greater, as determined by a pH meter using method 9040 specified in Test Methods for Evaluating Solid Waste, Second Ed., July 1982, or an equivalent method approved by DEQ.

(b) As a liquid corrodes steel (SAE 1020) at a rate greater than 0.250 inch per year at a test temperature of 130° F as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in Test Methods for Evaluating Solid Waste, Second Ed., July 1982, or an equivalent method approved by DEQ.

(2) Hazardous waste number: D002.

(3) Small quantity exemption: 200 lb/mo.

340-101-120 (1) A waste is a reactive (R) hazardous waste if a representative sample of the waste exhibits any of the following properties:

(a) It is normally unstable and readily undergoes violent change such as reacting violently or forming potentially explosive mixtures when mixed with water; or

(b) It contains a cyanide, sulfide or other substance which, when exposed to pH conditions between 2 and 12.5, can generate toxic fumes in a quantity sufficient to present a danger to human health or the environment; or

NOTES: (1) In most instances, the Department will consider waste containing > 100 ppm cyanide to be a reactive waste; and

(2) Pulping liquor is not normally considered a reactive waste.

(c) It is capable of detonation or explosive reaction with or without a strong initiating source or heat, including explosives as defined by 49 CFR 173.51 (Forbidden), 173.53 (Class A) or 173.88 (Class B); or

(d) It is an oxidizer.

NOTE: Unless determined otherwise, oxidizers shall be assumed incompatible with all other substances.

(2) Identification number: D003.

(3) Small quantity exemption: Determined by the Department on an individual basis but not to exceed 200 lb/mo.

(4) Waste explosives under the direct control of a local, State, or federal agency are exempt from these rules.

340-101-130 (1) A pesticide or pesticide manufacturing residue is a toxic hazardous waste if a representative sample of the waste exhibits any of the following properties:

(a) A 14-day oral LD₅₀ equal to or less than 500 mg/kg; or

(b) A one-hour inhalation LC₅₀ equal to or less than 2 mg/l; or

(c) A 14-day dermal LD₅₀ equal to or less than 2000 mg/kg; or

(d) A 96-hour aquatic LC₅₀ equal to or less than 250 mg/l.

NOTE: Pesticides meeting criteria (a) to (c) carry a DANGER, POISON, or WARNING label.

(2) Hazardous waste number: X001

(3) Small quantity exemption: 10 lb/mo.

NOTE: This rule is intended to regulate those pesticides and pesticide manufacturing residues not identified by rules 340-101-140 or -200 to -220.

340-101-140 (1) A waste is an EP toxic (E) hazardous waste if, using the test method described in Appendix 101.2 or an equivalent method

approved by DEQ, the extract from a representative sample of the waste contains any of the substances listed in Table 1 at a concentration equal to or greater than the respective value given in that Table. Where the waste contains less than 0.5% filterable solids, the waste itself, after filtering, is considered to be the extract for the purposes of this rule.

(2) Hazardous waste number: See Table 1.

(3) Small quantity exemption: See Table 1.

Table 1 - Identification of Wastes with
Characteristic of EP Toxicity

Hazardous Waste Number	Substance	Concentration (mg/l)	Small Quantity Exemption (lb/mo)
D004.....	Arsenic.....	5.0	10
D005*.....	Barium.....	100.0	200
D006.....	Cadmium.....	1.0	10
D007*.....	Chromium.....	5.0	200
D008*.....	Lead.....	5.0	200
D009.....	Mercury.....	0.2	10
D010*.....	Selenium.....	1.0	200
D011*.....	Silver.....	5.0	200
D012.....	Endrin (1,2,3,4,10,10- hexachloro-1,7-epoxy- 1,4,4a,5,6,7,8,8a-octa- hydro-1,4-endo, endo-5,8- dimethanonaphthalene).	0.02	10
D013.....	Lindane (1,2,3,4,5,6- hexachlorocyclohexane, gamma isomer).	0.4	10
D014.....	Methoxychlor (1,1,1- Trichloro-2,2-bis (p- methoxyphenyl) ethane).	10.0	10
D015.....	Toxaphene (C ₁₀ H ₁₀ Cl ₈ , Technical chlorinated camphene, 67-69% chlorine).	0.5	10
D016.....	2,4-D, (2,4-Dichlorophen- oxyacetic acid).	10.0	10
D017.....	2,4,5-TP Silvex (2,4,5- Trichlorophenoxypropionic acid).	1.0	10

* See rule 340-101-300 for meaning.

Listed Wastes

340-101-200 (1) A waste is a hazardous waste if it is listed in Tables 2 or 3, unless it has been excluded from those lists pursuant to rule 340-101-500.

(2) Hazard code:

Ignitable	I
Corrosive	C
Reactive	R
EP Toxic	E
Acutely Hazardous	H
Toxic	T

(3) Hazardous waste number: See Tables 2 and 3.

(4) Small quantity exemption: See Tables 2 and 3.

Table 2 - Hazardous Waste From Nonspecific Sources

Hazardous Waste Number	Hazardous Waste	Hazard Code	Small Quant. Exemption (lb/mo.)
F001*....	The following spent halogenated solvents or mixtures of those solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; and sludges from the recycle of these solvents or mixtures of solvents in degreasing operations.	T	200
F002*....	The following spent halogenated solvents or mixtures of those solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, and trichlorofluoromethane; and the still bottoms from the recycle of these solvents or mixtures of solvents.	T	200
F003*....	The following spent non-halogenated solvents or mixtures of those solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; and the still bottoms from the recycle of these solvents or mixtures of solvents.	I	25
F004*....	The following spent non-halogenated solvents or mixtures of those solvents: cresols and cresylic acid, and nitrobenzene; and the still bottoms from the recycle of these solvents or mixtures of solvents.	T	200
F005*....	The following spent non-halogenated solvents or mixtures of those solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and pyridine; and the still bottoms from the recycle of these solvents or mixtures of solvents.	I,T	25
F006*....	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	T	200
F019*....	Wastewater treatment sludges from the chemical conversion coating of aluminum.	T	200
F007.....	Spent cyanide plating bath solutions from electroplating operations.	R,T	10
F008.....	Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process.	R,T	10
F009.....	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	R,T	10

F010.....	Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process.	R,T	10
F011.....	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	R,T	10
F012.....	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	T	10
F020.....	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri-, tetra-, or pentachlorophenol, or of intermediates used to produce their derivatives. (This listing does not include wastes from the production of hexachlorophene from highly purified 2,3,4-trichlorophenol.)	H	2
F021.....	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.	H	2
F022.....	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of substances listed under F020 and F021.	H	2
F023.....	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from those chlorophenols.	H	2

* See rule 340-101-300 for meaning.

Table 3 - Hazardous Waste from Specific Sources

Hazardous Waste Number	Hazardous Waste	Hazard Code	Small Quant. Exemption (lb/mo.)
Wood Preservation:			
K001.....	Bottom sediment sludge from the treatment of waste-waters from wood preserving processes that use creosote and/or pentachlorophenol	T	10
Inorganic Pigments:			
K002*....	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	T	200
K003*....	Wastewater treatment sludge from the production of molybdate orange pigments.	T	200
K004*....	Wastewater treatment sludge from the production of zinc yellow pigments.	T	200
K005*....	Wastewater treatment sludge from the production of chrome green pigments.	T	200
K006*....	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	T	200
K007*....	Wastewater treatment sludge from the production of iron blue pigments.	T	200
K008*....	Oven residue from the production of chrome oxide green pigments.	T	200
Organic Chemicals:			
K009*....	Distillation bottoms from the production of acetaldehyde from ethylene.	T	200
K010*....	Distillation side cuts from the production of acetaldehyde from ethylene.	T	200
K011*....	Bottom stream from the wastewater stripper in the production of acrylonitrile.	R,T	200
K013*....	Bottom stream from the acetonitrile column in the production of acrylonitrile.	R,T	200
K014*....	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	T	200
K015.....	Still bottoms from the distillation of benzyl chloride.	T	10
K016*....	Heavy ends or distillation residues from the production of carbon tetrachloride.	T	200
K017*....	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin	T	200
K018*....	Heavy ends from fractionation in ethyl chloride production	T	200
K019*....	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	T	200
K020*....	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	T	200
K021*....	Aqueous spent antimony catalyst waste from fluoromethanes production.	T	200
K022*....	Distillation bottom tars from the production of phenol/acetone from cumene.	T	200
K023*....	Distillation light ends from the production of phthalic anhydride from naphthalene.	T	200
K024*....	Distillation bottoms from the production of phthalic anhydride from naphthalene.	T	200

K025*....	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	T	200
K026*....	Stripping still tails from the production of methyl ethyl pyridines.	T	200
K027*....	Centrifuge and distillation residue from toluene diisocyanate production.	R,T	200
K028*....	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	T	200
K029*....	Waste from the product stream stripper in the production of 1,1,1-trichloroethane.	T	200
K093*....	Distillation light ends from the production of phthalic anhydride from o-xylene.	T	200
K094*....	Distillation bottoms from the production of phthalic anhydride from o-xylene.	T	200
K095*....	Distillation bottoms from the production of 1,1,1-trichloroethane.	T	200
K096*....	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	T	200
K030*....	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	T	200
K083*....	Distillation bottoms from aniline production.	T	200
K103*....	Process residues from aniline extraction from the production of aniline.	T	200
K104*....	Combined wastewater streams generated from nitrobenzene/aniline production.	T	200
K085*....	Distillation or fractionation column bottoms from the production of chlorobenzenes.	T	200
K105*....	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	T	200
Inorganic Chemicals:			
K071.....	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.	T	10
K073*....	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	T	200
K106.....	Wastewater treatment sludge from the mercury cell process in chlorine production.	T	10
Pesticides:			
K031.....	By-products salts generated in the production of MSMA and cacodylic acid.	T	10
K032.....	Wastewater treatment sludge from the production of chlordane.	T	10
K033.....	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	T	10
K034.....	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	T	10
K097.....	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	T	10
K035.....	Wastewater treatment sludges generated in the production of creosote.	T	10
K036.....	Still bottoms from toluene reclamation distillation in the production of disulfoton.	T	10
K037.....	Wastewater treatment sludges from the production of disulfoton.	T	10
K038.....	Wastewater from the washing and stripping of phorate production.	T	10

K039.....	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	T	10
K040.....	Wastewater treatment sludge from the production of phorate	T	10
K041.....	Wastewater treatment sludge from the production of toxaphene.	T	10
K098.....	Untreated process wastewater from the production of toxaphene.	T	10
K042.....	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	T	10
K043.....	2,6-Dichlorophenol waste from the production of 2,4-D.	T	10
K099.....	Untreated wastewater from the production of 2,4-D.	T	10
Explosives:			
K044*....	Wastewater treatment sludges from the manufacturing and processing of explosives.	R	200
K045*....	Spent carbon from the treatment of wastewater containing explosives.	R	200
K046*....	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	T	200
K047*....	Pink/red water from TNT operations.	R	200
Petroleum Refining:			
K048*....	Dissolved air flotation (DAF) float from the petroleum refining industry.	T	200
K049*....	Slop oil emulsion solids from the petroleum refining industry.	T	200
K050*....	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	T	200
K051*....	API separator sludge from the petroleum refining industry.	T	200
K052*....	Tank bottoms (leaded) from the petroleum refining industry.	T	200
Iron and Steel:			
K061*....	Emission control dust/sludge from the primary production of steel in electric furnaces.	T	200
K062*....	Spent pickle liquor from steel finishing operations.	C,T	200
Secondary Lead:			
K069*....	Emission control dust/sludge from secondary lead smelting	T	200
K100*....	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	T	200
Veterinary Pharmaceuticals:			
K084.....	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	T	10
K101.....	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	T	10
K102.....	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	T	10
Ink Formulations:			
K086*....	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	T	200
Coking:			
K060*....	Ammonia still lime sludge from coking operations.	T	200
K087*....	Decanter tank tar sludge from coking operations.	T	200

* See rule 340-101-300 for meaning.

340-101-210 (1) The following substances are hazardous wastes if and when they are discarded or intended to be discarded:

(a) Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in Table 4;

(b) Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in Table 4;

(c) Any other waste having a 3% or greater concentration of any substance or mixture of substances listed in Table 4; and

(2) Hazardous waste number: See Table 4.

(3) Small quantity exemption:

(a) Commercial chemical product, manufacturing chemical intermediate, off-specification commercial chemical product, or off-specification manufacturing chemical intermediate: 2 lb/mo.

(b) Other wastes: 10 lb/mo.

Table 4 - Acutely Hazardous Substances

Hazardous Waste Number	Substance
P023.....	Acetaldehyde, chloro-
P002.....	Acetamide, N-(aminothioxomethyl)-
P057.....	Acetamide, 2-fluoro-
P058.....	Acetic acid, fluoro-, sodium salt
P066.....	Acetimidic acid, N-((methylcarbamoyl)-oxy)thio-, methyl ester
P001.....	3-(alpha-acetonylbenzyl)-4-hydroxycoumarin and salts
P002.....	1-Acetyl-2-thiourea
P003.....	Acrolein
P070.....	Aldicarb
P004.....	Aldrin
P005.....	Allyl alcohol
P006.....	Aluminum phosphide
P980.....	4-Aminobiphenyl
P007.....	5-(Aminomethyl)-3-isoxazolol
P008.....	4-aAminopyridine
P009.....	Ammonium picrate (R)
P119.....	Ammonium vanadate
P010.....	Arsenic acid
P012.....	Arsenic (III) oxide
P011.....	Arsenic (V) oxide
P011.....	Arsenic pentoxide
P012.....	Arsenic trioxide
P038.....	Arsine, diethyl-
P054.....	Aziridine
P013.....	Barium cyanide
P024.....	Benzenamine, 4-chloro-
P077.....	Benzenamine, 4-nitro-
P028.....	Benzene, (chloromethyl)-
P042.....	1,2-Benzenediol, 4-(1-hydroxy-2-(methylamino)ethyl)-
P014.....	Benzenethiol
P028.....	Benzyl chloride
P015.....	Beryllium dust
P016.....	Bis(chloromethyl) ether
P017.....	Bromoacetone
P018.....	Brucine
P021.....	Calcium cyanide
P123.....	Camphene, octachloro-
P103.....	Carbamimidoseleonic acid
P022.....	Carbon bisulfide
P022.....	Carbon disulfide
P095.....	Carbonyl chloride
P033.....	Chlorine cyanide
P023.....	Chloroacetaldehyde
P024.....	p-Chloroaniline
P026.....	1-(o-Chlorophenyl)thiourea
P027.....	3-Chloropropionitrile
P029.....	Copper cyanides

P030..... Cyanides (soluble cyanide salts), not
 elsewhere specified
 P031..... Cyanogen
 P033..... Cyanogen chloride
 P036..... Dichlorophenylarsine
 P037..... Dieldrin
 P038..... Diethylarsine
 P039..... O,O-Diethyl S-(2-(ethylthio)ethyl)
 phosphorodithioate
 P041..... Diethyl-p-nitrophenyl phosphate
 P040..... O,O-Diethyl O-pyrazinyl phosphorothioate
 P043..... Diisopropyl fluorophosphate
 P044..... Dimethoate
 P045..... 3,3-Dimethyl-1-(methylthio)-2-butanone,
 O-((methylamino)carbonyl) oxime
 P071..... O,O-Dimethyl O-p-nitrophenyl phosphoro-
 thioate
 P082..... Dimethylnitrosamine
 P046..... alpha, alpha-Dimethylphenethylamine
 P047..... 4,6-Dinitro-o-cresol and salts
 P034..... 4,6-Dinitro-o-cyclohexylphenol
 P048..... 2,4-Dinitrophenol
 P020..... Dinoseb
 P085..... Diphosphoramidate, octamethyl-
 P039..... Disulfoton
 P049..... 2,4-Dithiobiuret
 P109..... Dithiopyrophosphoric acid, tetraethyl
 ester
 P050..... Endosulfan
 P088..... Endothall
 P051..... Endrin
 P042..... Epinephrine
 P046..... Ethanamine, 1,1-dimethyl-2-phenyl-
 P084..... Ethenamine, N-methyl-N-nitroso-
 P101..... Ethyl cyanide
 P054..... Ethylenimine
 P097..... Famphur
 P056..... Fluorine
 P057..... Fluoroacetamide
 P058..... Fluoroacetic acid, sodium salt
 P065..... Fulminic acid, mercury(II) salt (R, T)
 P059..... Heptachlor
 P051..... 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,-
 4a,5,6,7,8,8a-octahydro-endo, endo-
 1,4,5,8-dimethanonaphthalene
 P037..... 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,-
 4a,5,6,7,8,8a-octahydro-endo, exo-
 1,4,5,8-dimethanonaphthalene
 P060..... 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-
 hexahydro-1,4,5,8-endo, endo-dimethano-
 naphthalene
 P004..... 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-
 hexahydro-1,4,5,8-endo, exo-dimethano-
 naphthalene

P060..... Hexachlorohexahydro-exo, exo-dimethano-
 naphthalene
 P062..... Hexaethyl tetraphosphate
 P116..... Hydrazinecarbothioamide
 P068..... Hydrazine, methyl-
 P063..... Hydrocyanic acid
 P063..... Hydrogen cyanide
 P096..... Hydrogen phosphide
 P064..... Isocyanic acid, methyl ester
 P007..... 3(2H)-isoxazoione, 5-(aminomethyl)-
 P092..... Mercury, (acetato-O)phenyl-
 P065..... Mercury fulminate (R,T)
 P016..... Methane, oxybis(chloro-
 P112..... Methane, tetranitro-(R)
 P118..... Methanethiol, trichloro-
 P059..... 4,7-Methano-1H-indene, 1,4,5,6,7,8,8-
 heptachloro-3a,4,7,7a-tetrahydro-
 P066..... Methomyl
 P067..... 2-Methylaziridine
 P068..... Methyl hydrazine
 P064..... Methyl isocyanate
 P069..... 2-Methylactonitrile
 P071..... Methyl parathion
 P072..... alpha-Naphthylthiourea
 P073..... Nickel carbonyl
 P074..... Nickel cyanide
 P074..... Nickel(II) cyanide
 P073..... Nickel tetracarbonyl
 P075..... Nicotine and salts
 P076..... Nitric oxide
 P077..... p-Nitroaniline
 P981..... 4-Nitrobiphenyl
 P078..... Nitrogen dioxide
 P076..... Nitrogen(II) oxide
 P078..... Nitrogen(IV) oxide
 P081..... Nitroglycerine (R)
 P082..... N-Nitrosodimethylamine
 P084..... N-Nitrosomethylvinylamine
 P050..... 5-Norbornene-2,3-dimethanol, 1,4,5,6,7,
 7-hexachloro, cyclic sulfite
 P085..... Octamethylpyrophosphoramide
 P087..... Osmium oxide
 P087..... Osmium tetroxide
 P088..... 7-Oxabicyclo(2,2,1)heptane-2,3-dicar-
 boxylic acid
 P089..... Parathion
 P034..... Phenol, 2-cyclohexyl-4,6-dinitro-
 P048..... Phenol, 2,4-dinitro-
 P047..... Phenol, 2,4-dinitro-6-methyl-
 P020..... Phenol, 2,4-dinitro-6-(1-methylpropyl)-
 P009..... Phenol, 2,4,6-trinitro-, ammonium salt (R)
 P036..... Phenyl dichlorosarine
 P092..... Phenylmercuric acetate
 P093..... N-Phenylthiourea
 P094..... Phorate

P095..... Phosgene
 P096..... Phosphine
 P041..... Phosphoric acid, diethyl p-nitrophenyl ester
 P044..... Phosphorodithioic acid, 0,0-dimethyl S-(2-(methylamino)-2-oxoethyl)ester
 P043..... Phosphorofluoric acid, bis(1-methyl-ethyl)-ester
 P094..... Phosphorothioic acid, 0,0-diethyl S-(ethylthio)methyl ester
 P089..... Phosphorothioic acid, 0,0-diethyl 0-(p-nitrophenyl) ester
 P040..... Phosphorothioic acid, 0,0-diethyl 0-pyrazinyl ester
 P097..... Phosphorothioic acid, 0,0-dimethyl 0-(p-((dimethylamino)-sulfonyl)phenyl) ester
 P110..... Plumbane, tetraethyl-
 P098..... Potassium cyanide
 P099..... Potassium silver cyanide
 P070..... Propanal, 2-methyl-2-(methylthio)-, 0-((methylamino)carbonyl)oxime
 P101..... Propanenitrile
 P027..... Propanenitrile, 3-chloro-
 P069..... Propanenitrile, 2-hydroxy-2-methyl-
 P081..... 1,2,3-Propanetriol, trinitrate- (R)
 P017..... 2-Propanone, 1-bromo-
 P102..... Propargyl alcohol
 P003..... 2-Propenal
 P005..... 2-Propen-1-ol
 P982..... beta-Propiolactone
 P067..... 1,2-Propylenimine
 P102..... 2-Propyn-1-ol
 P008..... 4-Pyridinamine
 P075..... Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts
 P111..... Pyrophosphoric acid, tetraethyl ester
 P103..... Selenourea
 P104..... Silver cyanide
 P105..... Sodium azide
 P106..... Sodium cyanide
 P107..... Strontium sulfide
 P108..... Strychnidin-10-one, and salts
 P018..... Strychnidin-10-one, 2,3-dimethoxy-
 P108..... Strychnine and salts
 P115..... Sulfuric acid, thallium(I) salt
 P109..... Tetraethyldithiopyrophosphate
 P110..... Tetraethyl lead
 P111..... Tetraethylpyrophosphate
 P112..... Tetranitromethane (R)
 P062..... Tetrphosphoric acid, hexaethyl ester
 P113..... Thallic oxide
 P113..... Thallium(III) oxide
 P114..... Thallium(I) selenite
 P115..... Thallium(I) sulfate

P045..... Thiofanox
P049..... Thiomidodicarbonic diamide
P014..... Thiophenol
P116..... Thiosemicarbazide
P026..... Thiourea, (2-chlorophenyl)-
P072..... Thiourea, 1-naphthalenyl-
P093..... Thiourea, phenyl-
P123..... Toxaphene
P118..... Trichloromethanethiol
P119..... Vanadic acid, ammonium salt
P120..... Vanadium pentoxide
P120..... Vanadium(V) oxide
P001..... Warfarin
P121..... Zinc cyanide
P122..... Zinc phosphide (R,T)

NOTE: The primary hazardous properties of these substances are H (Acutely hazardous), R (Reactive) and T (Toxic). Absence of a letter indicates that the compound is listed only as acutely hazardous.

340-101-220 (1) The following substances are hazardous wastes if and when they are discarded or intended to be discarded:

(a) Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in Table 5;

(b) Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in Table 5;

(c) Any other waste having a 10% or greater concentration of any substance or mixture of substances listed in Table 5 for toxicity (T); and

(2) Hazardous waste number: See Table 5.

(3) Small quantity exemption: 10 lb/mo.

Table 5 - Toxic Substances

Hazardous Waste Number	Substance
U001.....	Acetaldehyde (I)
U034.....	Acetaldehyde, trichloro-
U187.....	Acetamide, N-(4-ethoxyphenyl)-
U005.....	Acetamide, N-9H-fluoren-2-yl-
U112.....	Acetic acid, ethyl ester (I)
U144.....	Acetic acid, lead salt
U214.....	Acetic acid, thallium(I) salt
U002.....	Acetone (I)
U003.....	Acetonitrile (I,T)
U004.....	Acetophenone
U005.....	2-Acetylaminofluorene
U006.....	Acetyl chloride (C,R,T)
U007.....	Acrylamide
U008.....	Acrylic acid (I)
U009.....	Acrylonitrile
U150.....	Alanine, 3-(p-bis(2-chloroethyl)amino) phenyl, L-
U011.....	Amitrole
U012.....	Aniline (I,T)
U014.....	Auramine
U015.....	Azaserine
U010.....	Azirino(2',3':3,4)pyrrolo(1,2-a)indole- 4,7-dione, 6-amino-8-(((aminocarbonyl)- oxy)methyl)-1, 1a,2,8,8a,8b-hexahydro-8a- methoxy-5-methyl-,
U157.....	Benz(j)aceanthrylene, 1,2-dihydro-3- methyl-
U016.....	Benz(c)acridine
U016.....	3,4-Benzacridine
U017.....	Benzal chloride
U018.....	Benz(a)anthracene
U018.....	1,2-Benzanthracene
U094.....	1,2-Benzanthracene, 7,12-dimethyl-
U012.....	Benzenamine (I,T)
U014.....	Benzenamine, 4,4'-carbonimidoylbis(N,N- dimethyl-
U049.....	Benzenamine, 4-chloro-2-methyl-
U093.....	Benzenamine, N,N'-dimethyl-4-phenylazo-
U158.....	Benzenamine, 4,4'-methylenebis(2-chloro-
U222.....	Benzenamine, 2-methyl-, hydrochloride
U181.....	Benzenamine, 2-methyl-5-nitro
U019.....	Benzene (I,T)
U038.....	Benzeneacetic acid, 4-chloro-alpha-(4- chlorophenyl)-alpha-hydroxy, ethyl ester
U030.....	Benzene, 1-bromo-4-phenoxy-
U037.....	Benzene, chloro-
U190.....	1,2-Benzenedicarboxylic acid anhydride
U028.....	1,2-Benzenedicarboxylic acid, (bis(2- ethyl-hexyl)) ester

U069..... 1,2-Benzenedicarboxylic acid, dibutyl ester
 U088..... 1,2-Benzenedicarboxylic acid, diethyl ester
 U102..... 1,2-Benzenedicarboxylic acid, dimethyl ester
 U107..... 1,2-Benzenedicarboxylic acid, di-n-octyl ester
 U070..... Benzene, 1,2-dichloro-
 U071..... Benzene, 1,3-dichloro-
 U072..... Benzene, 1,4-dichloro-
 U017..... Benzene, (dichloromethyl)-
 U223..... Benzene, 1,3-diisocyanatomethyl- (R,T)
 U239..... Benzene, dimethyl- (I,T)
 U201..... 1,3-Benzenediol
 U127..... Benzene, hexachloro-
 U056..... Benzene, hexahydro- (I)
 U188..... Benzene, hydroxy-
 U220..... Benzene, methyl-
 U105..... Benzene, 1-methyl-1,2,4-dinitro-
 U106..... Benzene, 1-methyl-2,6-dinitro-
 U203..... Benzene, 1,2-methylenedioxy-4-allyl-
 U141..... Benzene, 1,2-methylenedioxy-4-propenyl-
 U090..... Benzene, 1,2-methylenedioxy-4-propyl-
 U055..... Benzene, (1-methylethyl)- (I)
 U169..... Benzene, nitro- (I,T)
 U183..... Benzene, pentachloro-
 U185..... Benzene, pentachloro-nitro-
 U020..... Benzenesulfonic acid chloride (C,R)
 U020..... Benzenesulfonyl chloride (C,R)
 U207..... Benzene, 1,2,4,5-tetrachloro-
 U023..... Benzene, (trichloromethyl)-(C,R,T)
 O234..... Benzene, 1,3,5-trinitro- (R,T)
 U021..... Benzidine
 U202..... 1,2-Benzisothiazolin-3-one, 1,1-dioxide
 U120..... Benzo(j,k)fluorene
 U022..... Benzo(a)pyrene
 U022..... 3,4-Benzopyrene
 U197..... p-Benzoquinone
 U023..... Benzotrichloride (C,R,T)
 U050..... 1,2-Benzphenanthrene
 U085..... 2,2'-Bioxirane (I,T)
 U021..... (1,1'-Biphenyl)-4,4'-diamine
 U073..... (1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-
 U091..... (1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-
 U095..... (1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-
 U024..... Bis(2-chloroethoxy) methane
 U027..... Bis(2-chloroisopropyl) ether
 U244..... Bis(dimethylthiocarbamoyl) disulfide
 U028..... Bis(2-ethylhexyl) phthalate
 U246..... Bromine cyanide
 U225..... Bromoform

U030..... 4-Bromophenyl phenyl ether
 U128..... 1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
 U172..... 1-Butanamine, N-butyl-N-nitroso-
 U035..... Butanoic acid, 4-(Bis(2-chloroethyl)-
 amino) benzene-
 U031..... 1-Butanol (I)
 U159..... 2-Butanone (I,T)
 U160..... 2-Butanone peroxide (R,T)
 U053..... 2-Butenal
 U074..... 2-Butene, 1,4-dichloro- (I,T)
 U031..... n-Butyl alcohol (I)
 U136..... Cacodylic acid
 U032..... Calcium chromate
 U238..... Carbamic acid, ethyl ester
 U178..... Carbamic acid, methylnitroso-, ethyl
 ester
 U176..... Carbamide, N-ethyl-N-nitroso-
 U177..... Carbamide, N-methyl-N-nitroso-
 U219..... Carbamide, thio-
 U097..... Carbamoyl chloride, dimethyl-
 U215..... Carbonic acid, dithallium(I) salt
 U156..... Carbonochloridic acid, methyl ester
 (I,T)
 U033..... Carbon oxyfluoride (R,T)
 U211..... Carbon tetrachloride
 U033..... Carbonyl fluoride (R,T)
 U034..... Chloral
 U035..... Chlorambucil
 U036..... Chlordane, technical
 U026..... Chlornaphazine
 U037..... Chlorobenzene
 U039..... 4-Chloro-m-cresol
 U041..... 1-Chloro-2,3-epoxypropane
 U042..... 2-Chloroethyl vinyl ether
 U044..... Chloroform
 U046..... Chloromethyl methyl ether
 U047..... beta-Chloronaphthalene
 U048..... o-Chlorophenol
 U049..... 4-Chloro-o-toluidine, hydrochloride
 U032..... Chromic acid, calcium salt
 U050..... Chrysene
 U051..... Creosote
 U052..... Cresols
 U052..... Cresylic acid
 U053..... Crotonaldehyde
 U055..... Cumene (I)
 U246..... Cyanogen bromide
 U197..... 1,4-Cyclohexadienedione
 U056..... Cyclohexane (I)
 U057..... Cyclohexanone (I)
 U130..... 1,3-Cyclopentadiene, 1,2,3,4,5,5-
 hexachloro-
 U058..... Cyclophosphamide
 U240..... 2,44-D, salts and esters
 U059..... Daunomycin

U060..... DDD
 U061..... DDT
 U142..... Decachlorooctahydro-1,3,4-metheno-2H-
 cyclobuta(c,d)-pentalen-2-one
 U062..... Diallate
 U133..... Diamine (R,T)
 U221..... Diaminotoluene
 U063..... Dibenz(a,h)anthracene
 U063..... 1,2:5,6-Dibenzanthracene
 U064..... 1,2:7,8-Dibenzopyrene
 U064..... Dibenz(a,i)pyrene
 U066..... 1,2-Dibromo-3-chloropropane
 U069..... Dibutyl phthalate
 U062..... S-(2,3-Dichloroallyl) diisopropylthio-
 carbamate
 U070..... o-Dichlorobenzene
 U071..... m-Dichlorobenzene
 U072..... p-Dichlorobenzene
 U073..... 3,3'-Dichlorobenzidine
 U074..... 1,4-Dichloro-2-butene (I,T)
 U075..... Dichlorodifluoromethane
 U192..... 3,5-Dichloro-N-(1,1-dimethyl-2-propo-
 nyl) benzamide
 U060..... Dichloro diphenyl dichloroethane
 U061..... Dichloro diphenyl trichloroethane
 U078..... 1,1-Dichloroethylene
 U079..... 1,2-Dichloroethylene
 U025..... Dichloroethyl ether
 U081..... 2,4-Dichlorophenol
 U082..... 2,6-Dichlorophenol
 U240..... 2,4-Dichlorophenoxyacetic acid, salts
 and esters
 U083..... 1,2-Dichloropropane
 U084..... 1,3-Dichloropropene
 U085..... 1,2,3,4-Diepoxybutane (I,T)
 U108..... 1,4-Diethylene dioxide
 U086..... N,N-Diethylhydrazine
 U087..... O,O-Diethyl-S-methyl-dithiophosphate
 U088..... Diethyl phthalate
 U089..... Diethylstilbestrol
 U148..... 1,2-Dihydro-3,6-pyridinedione
 U090..... Dihydrosafrole
 U091..... 3,3'-Dimethoxybenzidine
 U092..... Dimethylamine (I)
 U093..... Dimethylaminoazobenzene
 U094..... 7,12-Dimethylbenz(a)anthracene
 U095..... 3,3'-Dimethylbenzidine
 U096..... alpha,alpha-Dimethylbenzylhydroperoxide
 (R)
 U097..... Dimethylcarbamoyl chloride
 U098..... 1,1-Dimethylhydrazine
 U099..... 1,2-Dimethylhydrazine
 U101..... 2,4-Dimethylphenol
 U102..... Dimethyl phthalate
 U103..... Dimethyl sulfate

U105..... 2,4-Dinitrotoluene
 U106..... 2,6-Dinitrotoluene
 U107..... Di-n-octyl phthalate
 U108..... 1,4-Dioxane
 U109..... 1,2-Diphenylhydrazine
 U110..... Dipropylamine (I)
 U111..... Di-N-propylnitrosamine
 U001..... Ethanal (I)
 U174..... Ethanamine, N-ethyl-N-nitroso-
 U067..... Ethane, 1,2-dibromo-
 U076..... Ethane, 1,1-dichloro-
 U077..... Ethane, 1,2-dichloro-
 U114..... 1,2-Ethanediylobiscarbamodithioic acid
 U131..... Ethane, 1,1,1,2,2,2-hexachloro-
 U024..... Ethane, 1,1'-(methylenebis(oxy))bis(2-
 chloro-
 U003..... Ethanenitrile (I,T)
 U117..... Ethane, 1,1'-oxybis- (I)
 U025..... Ethane, 1,1'-oxybis(2-chloro-
 U184..... Ethane, pentachloro-
 U208..... Ethane, 1,1,1,2-tetrachloro-
 U209..... Ethane, 1,1,2,2-tetrachloro-
 U218..... Ethanethioamide
 U247..... Ethane, 1,1,1-trichloro-2,2-bis-
 (p-methoxyphenyl)
 U227..... Ethane, 1,1,2-trichloro-
 U043..... Ethene, chloro-
 U042..... Ethene, 2-chloroethoxy-
 U078..... Ethene, 1,1-dichloro-
 U079..... Ethene, trans-1,2-dichloro-
 U210..... Ethene, 1,1,2,2-tetrachloro-
 U173..... Ethanol, 2,2'-(nitrosoimino)bis-
 U004..... Ethanone, 1-phenyl-
 U006..... Ethanoyl chloride (C,R,T)
 U112..... Ethyl acetate (I)
 U113..... Ethyl acrylate (I)
 U238..... Ethyl carbamate (urethan)
 U038..... Ethyl 4,4'-dichlorobenzilate
 U114..... Ethylenebis(dithiocarbamic acid)
 U067..... Ethylene dibromide
 U077..... Ethylene dichloride
 U115..... Ethylene oxide (I,T)
 U116..... Ethylene thiourea
 U117..... Ethyl ether (I)
 U076..... Ethylidene dichloride
 U118..... Ethylmethacrylate
 U119..... Ethyl methanesulfonate
 U139..... Ferric dextran
 U120..... Fluoranthene
 U122..... Formaldehyde
 U123..... Formic acid (C,T)
 U124..... Furan (I)
 U125..... 2-Furancarboxaldehyde (I)
 U147..... 2,5-Furandione
 U213..... Furan, tetrahydro- (I)

U125..... Furfural (I)
 U124..... Furfuran (I)
 U206..... D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)-
 U126..... Glycidylaldehyde
 U163..... Guanidine, N-nitroso-N-methyl-N'nitro-
 U127..... Hexachlorobenzene
 U128..... Hexachlorobutadiene
 U129..... Hexachlorocyclohexane (gamma isomer)
 U130..... Hexachlorocyclopentadiene
 U131..... Hexachloroethane
 U132..... Hexachlorophene
 U243..... Hexachloropropene
 U133..... Hydrazine (R,T)
 U086..... Hydrazine, 1,2-diethyl-
 U098..... Hydrazine, 1,1-dimethyl-
 U099..... Hydrazine, 1,2-dimethyl-
 U109..... Hydrazine, 1,2-diphenyl-
 U134..... Hydrofluoric acid (C,T)
 U134..... Hydrogen fluoride (C,T)
 U135..... Hydrogen sulfide
 U096..... Hydroperoxide, 1-methyl-1-phenylethyl-
 (R)
 U136..... Hydroxydimethylarsine oxide
 U116..... 2-Imidazolidinethione
 U137..... Indeno(1,2,3-cd)pyrene
 U139..... Iron dextran
 U140..... Isobutyl alcohol (I,T)
 U141..... Isosafrole
 U142..... Kepone
 U143..... Lasiocarpine
 U144..... Lead acetate
 U145..... Lead phosphate
 U146..... Lead subacetate
 U129..... Lindane
 U147..... Maleic anhydride
 U148..... Maleic hydrazide
 U149..... Malononitrile
 U150..... Melphalan
 U151..... Mercury
 U152..... Methacrylonitrile (I,T)
 U092..... Methanamine, N-methyl- (I)
 U029..... Methane, bromo-
 U045..... Methane, chloro- (I,T)
 U046..... Methane, chloromethoxy-
 U068..... Methane, dibromo-
 U080..... Methane, dichloro-
 U075..... Methane, dichlorodifluoro-
 U138..... Methane, iodo-
 U119..... Methanesulfonic acid, ethyl ester
 U211..... Methane, tetrachloro-
 U121..... Methane, trichlorofluoro-
 U153..... Methanethiol (I,T)
 U225..... Methane, tribromo-
 U044..... Methane, trichloro-

U121..... Methane, trichlorofluoro-
 U123..... Methanoic acid (C,T)
 U036..... 4,7-Methanoindan, 1,2,4,5,6,7,8,8-
 octachloro-3a,4,7,7a-tetrahydro-
 U154..... Methanol (I)
 U155..... Methapyrilene
 U247..... Methoxychlor
 U154..... Methyl alcohol (I)
 U029..... Methyl bromide
 U186..... 1-Methylbutadiene (I)
 U045..... Methyl chloride (I,T)
 U156..... Methyl chlorocarbonate (I,T)
 U226..... Methylchloroform
 U157..... 3-Methylcholanthrene
 U158..... 4,4'-Methylenebis(2-chloroaniline)
 U132..... 2,2'-Methylenebis(3,4,6-trichlorophenol)
 U068..... Methylene bromide
 U080..... Methylene chloride
 U122..... Methylene oxide
 U159..... Methyl ethyl ketone (I,T)
 U160..... Methyl ethyl ketone peroxide (R,T)
 U138..... Methyl iodide
 U161..... Methyl isobutyl ketone (I)
 U162..... Methyl methacrylate (I,T)
 U163..... N-Methyl-N'-nitro-N-nitrosoguanidine
 U161..... 4-Methyl-2-pentanone (I)
 U164..... Methylthiouracil
 U010..... Mitomycin C
 U059..... 5,12-Naphthacenedione, (8S-cis)-8-acetyl-
 10-((3-amino-2,3,6-trideoxy-alpha-L-
 lyxo-hexopyranosyl)oxyl)-7,8,9,10-tetra-
 hydro-6,8,11-trihydroxy-1-methoxy-
 U165..... Naphthalene
 U047..... Naphthalene, 2-chloro-
 U166..... 1,4-Naphthalenedione
 U236..... 2,7-Naphthalenedisulfonic acid, 3,3'-
 ((3,3'-dimethyl-(1,1'-biphenyl)-4,4'
 diyl))-bis(azo)bis(5-amino-4-hydroxy)-,
 tetrasodium salt
 U166..... 1,4-Naphthaquinone
 U167..... 1-Naphthylamine
 U168..... 2-Naphthylamine
 U167..... alpha-Naphthylamine
 U168..... beta-Naphthylamine
 U026..... 2-Naphthylamine, N,N'-bis(2-chloro-
 methyl)-
 U169..... Nitrobenzene (I,T)
 U170..... p-Nitrophenol
 U171..... 2-Nitropropane (I)
 U172..... N-Nitrosodi-n-butylamine
 U173..... N-Nitrosodiethanolamine
 U174..... N-Nitrodiethylamine
 U111..... N-Nitroso-N-propylamine
 U176..... N-Nitroso-N-ethylurea
 U177..... N-Nitroso-N-methylurea

U178..... N-Nitroso-N-methylurethane
 U179..... N-Nitrosopiperidine
 U180..... N-Nitrosopyrrolidine
 U181..... 5-Nitro-o-toluidine
 U193..... 1,2-Oxathiolane, 2,2-dioxide
 U058..... 2H-1,3,2-Oxazaphosphorine, 2-(bis(2-
 chloro-ethyl)amino)tetrahydro-, oxide 2-
 U115..... Oxirane (I,T)
 U041..... Oxirane, 2-(chloromethyl)-
 U182..... Paraldehyde
 U183..... Pentachlorobenzene
 U184..... Pentachloroethane
 U185..... Pentachloronitrobenzene
 U242..... Pentachlorophenol
 U186..... 1,3-Pentadiene (I)
 U187..... Phenacetin
 U188..... Phenol
 U048..... Phenol, 2-chloro-
 U039..... Phenol, 4-chloro-3-methyl-
 U081..... Phenol, 2,4-dichloro-
 U082..... Phenol, 2,6-dichloro-
 U101..... Phenol, 2,4-dimethyl-
 U170..... Phenol, 4-nitro-
 U242..... Phenol, pentachloro-
 U212..... Phenol, 2,3,4,6-tetrachloro-
 U230..... Phenol, 2,4,5-trichloro-
 U231..... Phenol, 2,4,6-trichloro-
 U137..... 1,10-(1,2-phenylene)pyrene
 U145..... Phosphoric acid, Lead salt
 U087..... Phosphorodithioic acid, O,O-diethyl-,
 S-methylester
 U189..... Phosphorous sulfide (R)
 U190..... Phthalic anhydride
 U191..... 2-Picoline
 U192..... Pronamide
 U194..... 1-Propanamine (I,T)
 U110..... 1-Propanamine, N-propyl- (I)
 U066..... Propane, 1,2-dibromo-3-chloro-
 U149..... Propanedinitrile
 U171..... Propane, 2-nitro- (I)
 U027..... Propane, 2,2'-oxybis(2-chloro-
 U193..... 1,3-Propane sultone
 U235..... 1-Propanol, 2,3-dibromo-, phosphate
 (3:1)
 U126..... 1-Propanol, 2,3-epoxy-
 U140..... 1-Propanol, 2-methyl- (I,T)
 U002..... 2-Propanone (I)
 U007..... 2-Propenamide
 U084..... Propene, 1,3-dichloro-
 U243..... 1-Propene, 1,1,2,3,3,3-hexachloro-
 U009..... 2-Propenenitrile
 U152..... 2-Propenenitrile, 2-methyl- (I,T)
 U008..... 2-Propenoic acid (I)
 U113..... 2-Propenoic acid, ethyl ester (I)
 U118..... 2-Propenoic acid, 2-methyl-, ethyl ester

U162..... 2-Propenoic acid, 2-methyl-, methyl
 ester (I,T)
 U233..... Propionic acid, 2-(2,4,5-trichloro-
 phenoxy)-
 U194..... n-Propylamine (I,T)
 U083..... Propylene dichloride
 U196..... Pyridine
 U155..... Pyridine, 2-((2-(dimethylamino)-2-
 thenylamino)-
 U179..... Pyridine, hexahydro-N-nitroso-
 U191..... Pyridine, 2-methyl-
 U164..... 4(1H)-Pyrimidinone, 2,3dihydro-6-methyl-
 2-thioxo-
 U180..... Pyrrole, tetrahydro-N-nitroso-
 U200..... Reserpine
 U201..... Resorcinol
 U202..... Saccharin and salts
 U203..... Safrole
 U204..... Selenious acid
 U204..... Selenium dioxide
 U205..... Selenium disulfide (R,T)
 U015..... L-Senne, diazoacetate (ester)
 U233..... Silvex
 U089..... 4,4'-Stilbenediol, alpha,alpha'-diethyl-
 U206..... Streptozotocin
 U135..... Sulfur hydride
 U103..... Sulfuric acid, dimethyl ester
 U189..... Sulfur phosphide (R)
 U205..... Sulfur selenide (R,T)
 U232..... 2,4,5-T
 U207..... 1,2,4,5-Tetrachlorobenzene
 U208..... 1,1,1,2-Tetrachloroethane
 U209..... 1,1,2,2-Tetrachloroethane
 U210..... Tetrachloroethylene
 U212..... 2,3,4,6-Tetrachlorophenol
 U213..... Tetrahydrofuran (I)
 U214..... Thallium(I) acetate
 U215..... Thallium(I) carbonate
 U216..... Thallium(I) chloride
 U217..... Thallium(I) nitrate
 U218..... Thioacetamide
 U153..... Thiomethanol (I,T)
 U219..... Thiourea
 U244..... Thiram
 U220..... Toluene (I,T)
 U221..... Toluenediamine
 U223..... Toluene diisocyanate (R,T)
 U222..... O-Toluidine hydrochloride
 U011..... 1H-1,2,4-Triazol-3-amine
 U226..... 1,1,1-Trichloroethane
 U227..... 1,1,2-Trichloroethane
 U228..... Trichloroethene
 U228..... Trichloroethylene
 U121..... Trichloromonofluoromethane
 U230..... 2,4,5-Trichlorophenol

U231..... 2,4,6-Trichlorophenol
U232..... 2,4,5-Trichlorophenoxyacetic acid
U234..... sym-Trinitrobenzene (R,T)
U182..... 1,3,5-Trioxane, 2,4,5-trimethyl-
U235..... Tris(2,3-dibromopropyl) phosphate
U236..... Trypan blue
U237..... Uracil, 5(bis(2-chloromethyl)amino)-
U237..... Uracil mustard
U043..... Vinyl chloride
U239..... Xylene (I)
U200..... Yohimban-16-carboxylic acid, 11,17-
dimethoxy-18-((3,4,5-trimethoxy-ben-
zoyl)oxy)-, methyl ester

NOTE: The primary hazardous properties of these substances are T (Toxic), R (Reactive), I (Ignitable) and C (Corrosive). Absence of a letter indicates that the compound is listed only as toxic.

340-101-230 (1) A PCB waste is a hazardous waste if it is identified with a hazardous waste number in Table 6.

NOTE: Several PCB wastes that are not hazardous wastes have been included for informational purposes.

(2) PCB hazardous waste shall be disposed in accordance with the options listed in Table 6. Chemical and other methods of PCB destruction that are not listed will be licensed by the Department on an individual basis.

(3) Small quantity exemption: None.

NOTE: This rule identifies those PCB wastes regulated by the Department as hazardous wastes. Generators of listed PCB wastes must also comply with the federal rules at 40 CFR Part 761.

Table 6 - PCB Hazardous Wastes

<u>Hazardous Waste Number</u>	<u>PCB Waste</u>	<u>Disposal Options</u>
X010	PCB liquid, PCB \geq 500 ppm	(1) PCB-approved incinerator licensed in compliance with Division 117.* (2) Alternative treatment facility approved by DEQ provided such facility has a destruction efficiency equivalent to a PCB-approved incinerator. PCB liquid must not be processed into nonliquid form to circumvent these requirements.
X011	PCB-contaminated liquid, 50 \leq PCB < 500 ppm	(1) PCB-approved incinerator licensed in compliance with Division 117. (2) PCB-approved boiler or industrial furnace authorized in compliance with Division 117. (3) If not ignitable, PCB-approved landfill licensed in compliance with Division 116. (4) Alternative treatment facility approved by DEQ provided such facility has a destruction efficiency equivalent to a PCB-approved boiler.
---	Liquid, PCB < 50 ppm	Not regulated as hazardous waste, except that it is prohibited to use waste oil that contains any detectable concentration of PCB in a manner that constitutes direct loss to the environment. Prohibited uses include, but are not limited to, road oiling, dust control, use as a pesticide or herbicide carrier, or as a rust preventative on pipes.
X012	Contaminated soil, rags, other debris, PCB \geq 50 ppm	(1) PCB-approved incinerator licensed in compliance with Division 117. (2) PCB-approved landfill licensed in compliance with Division 116.*
X013	Dredged materials and municipal sewage treatment sludge, PCB \geq 50 ppm	(1) PCB-approved incinerator licensed in compliance with Division 117. (2) PCB-approved landfill licensed in compliance with Division 116. (3) Alternative manner approved by DEQ.
X014	PCB transformers, full or drained	(1) PCB-approved incinerator licensed in compliance with Division 117. (2) PCB-approved landfill licensed in compliance with Division 116;
X015	PCB transformers, solvent treated	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 this rule. Solvents may include kerosene, xylene, toluene and other substances in which PCBs are readily soluble.

Table 6 - (cont.)

<u>Hazardous Waste Number</u>	<u>PCB Waste</u>	<u>Disposal Options</u>
X016	PCB large capacitors	(1) PCB-approved incinerator licensed in compliance with Division 117. (2) Alternative facility approved by DEQ.
--	PCB small capacitors	Not regulated as hazardous waste, except that any PCB small capacitors owned by persons who at any time manufactured PCB capacitors or other PCB articles and acquired the PCB capacitors in the course of such manufacture shall dispose of them as hazardous waste No. X016.
X017	PCB hydraulic machines, full PCB hydraulic machines, drained or flushed with solvent (as appropriate)	Not regulated as hazardous waste provided machines are drained of all free-flowing liquid and the liquid disposed in accordance with this rule. If the liquid contains 1000 ppm or greater PCB, the machine must be flushed prior to disposal with a solvent containing less than 50 ppm PCB and the solvent disposed in accordance with this rule.
X018	PCB-contaminated large capacitors	(1) PCB-approved incinerator licensed in compliance with Division 117. (2) PCB-approved landfill licensed in compliance with Division 116.
X019	Other PCB articles, full	(1) PCB-approved incinerator licensed in compliance with Division 117.
X020	Other PCB articles, drained	(2) PCB-approved landfill licensed in compliance with Division 116; provided that the articles are drained of all free-flowing liquid and the liquid disposed of in accordance with this rule.
X021	Other PCB-contaminated articles, full Other PCB-contaminated articles, drained	Not regulated as hazardous waste provided that the articles are drained of all free-flowing liquid and the liquid disposed of in accordance with this rule.
--	PCB containers, empty	(1) PCB-approved incinerator licensed in compliance with Division 117. (2) PCB-approved landfill licensed in compliance with Division 116. (3) Manage in accordance with rule 340-101-300(2).
	PCB-contaminated containers, empty	Not regulated as hazardous waste.

* Or a lawfully operating out-of-state facility.

Empty Containers

340-101-300 (1) Empty containers are hazardous waste if they previously contained a hazardous substance or hazardous waste, except that:

(a) Empty pesticide containers shall be managed in accordance with Division 125; and

(b) Empty containers generated from domestic use are not hazardous waste.

(2) Empty containers may be managed as ordinary solid waste if they are decontaminated, verified, and, if disposed, altered, as follows:

(a) Decontamination consist of removing any residual by:

(A) Jet or multiple rinsing;

(B) Aeration of volatile substances;

(C) Chemical washing methods such as those used to recondition metal drums;

(D) Removing the inner liner that prevented contact of the hazardous substance or hazardous waste with the container and managing the liner as hazardous waste; or

(E) Other methods that have been shown in the scientific literature, or by generator tests, to achieve equivalent removal.

(b) Verification consists of observing no residue on the interior surface of the container, or no turbidity (less than 5 Nephelometric turbidity units) in a sample rinse when a diluent, which does not solubilize the residue, is placed in the container to fill 5% of its volume and agitated for 30 seconds.

(c) Alteration consists of puncturing or removing both ends and crushing the container except that:

(A) 55-gallon or larger containers shall be punctured or have their ends removed but need not be crushed;

(B) Containers to be beneficially used or recycled need not be altered if alteration would interfere with the end use of the resultant commercial product; and

(C) Gas cylinders shall be altered by removing the closure valve or valve stem to ensure venting.

(d) Empty containers generated by the use of a hazardous substance or hazardous waste designated ignitable (D001), corrosive (D002), or in Tables 1 to 3 with a * after the hazardous waste number need not be decontaminated or verified.

(3) Empty or decontaminated hazardous substance or hazardous waste containers shall not be used for domestic use or to store food or fiber intended for human or animal consumption.

Small Quantity Management

340-101-350 (1) Except as noted in section (2) of this rule, small quantities of hazardous waste that do not exceed the small quantity exemptions cited in this Division may be managed as ordinary solid waste if they are disposed as follows:

(a) The waste must be securely contained to minimize the possibility of waste release prior to burial.

(b) Persons disposing of such waste from other than domestic use shall obtain permission from the waste collector or from the landfill permittee, as appropriate, before depositing the waste in any container for subsequent collection or in any landfill for disposal. In the event that

the waste collector or landfill permittee refuses to accept the waste, the Department shall be contacted for alternative disposal instructions.

(c) The waste must be taken to a permitted solid waste disposal site.

(2) The small-quantity exemption does not apply to generators who produce or have in their possession 2 lb. or greater of any one or combination of wastes listed in rule 340-101-210(1)(a) or (b), or 2,000 lb. or greater of any one or combination of other hazardous wastes (i.e., large generators).

Declassification of Listed Wastes

340-101-500 A generator may petition the Department to delist a rule 340-101-200 to -220 waste generated at a specific facility by demonstrating that the waste produced by the facility does not meet any of the criteria under which the waste was listed as a hazardous waste.

(1) If the waste is hazard-coded I, C, R, or E, the generator must demonstrate that the waste does not exhibit the relevant characteristic defined by rules 340-101-100 to -140 using any applicable test methods prescribed therein.

(2) If the waste is hazard-coded H or T, the generator must demonstrate that:

(a) The waste does not contain the constituents (as defined in Appendix 101.5) that caused the waste to be listed, using the appropriate test methods prescribed in Appendix 101.4; or

(b) The waste contains the constituents that caused it to be listed in such a manner that it is not capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed, considering:

(A) The nature of the toxicity presented by the constituent;

(B) The concentration of the constituent;

(C) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in paragraph (2)(b)(G) of this rule;

(D) The persistence of the constituent or any toxic degradation product of the constituent;

(E) The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation;

(F) The degree to which the constituent or any degradation product of the constituent bioaccumulates in the ecosystem;

(G) The plausible types of improper management to which the waste could be subjected;

(H) The quantities of the waste generated at individual generation sites or on a regional or national basis;

(I) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent;

(J) Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent; and

(K) Such other factors as may be appropriate.

(3) In addition to section (2) of this rule, if the waste is hazard coded H, the generator must also demonstrate that the waste is not fatal to

humans in low doses or, in the absence of data on human toxicity, that it does not exceed the toxicity of rule 340-101-130(1), or that it is otherwise not capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness.

(4) A demonstration shall be based on enough representative samples, but in no case less than four, taken over a period of time sufficient to account for the variability of the waste.

340-101-510 (1) A petition submitted pursuant to rule 340-101-500 must include:

- (a) The generator's name, address, and telephone number;
- (b) A description of the proposed action, including (where appropriate) suggested regulatory language;
- (c) The name and address of the laboratory performing the sampling or tests on the waste;
- (d) The names and qualifications of the persons sampling and testing the waste;
- (e) The dates of sampling and testing;
- (f) A description of the manufacturing processes or other operations and feed materials producing the waste and an assessment of whether such processes, operations, or feed materials might produce a waste that is not covered by the demonstration;
- (g) A description of the waste and an estimate of the average and maximum monthly and annual quantities of waste covered by the demonstration;
- (h) A description of the methodologies and equipment used to obtain the representative samples;
- (i) A description of the sample handling and preparation techniques, including techniques used for collection, preservation and shipment of the samples;
- (j) A description of the tests performed (including results);
- (k) The names and model numbers of the instruments used in performing the tests;
- (l) A consideration of the factors outlined in rule 340-101-500(2)(b) and (3), if applicable; and
- (m) The following statement signed by the generator or his authorized representative:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

(2) After receiving a petition for delisting, the Department may request any additional information which it may reasonably require to evaluate the petition.

(3) The delisting will apply only to the waste generated at the specific facility for which the petition was made and will not apply to waste from any other facility.

(4) The Department may exclude only part of the waste for which the petition was made where it has reason to believe that variability of the

waste justifies a partial exclusion.

(5) The Department may grant a temporary exclusion before making a final decision whenever it finds that there is a substantial likelihood that an exclusion will be finally granted.

Appendix 101.1: Representative Sampling Methods

The methods and equipment used for sampling wastes will vary with the form and consistency of the wastes to be sampled. Samples collected using the sampling protocols listed below, for sampling wastes with properties similar to the indicated materials, will be considered by the Department to be representative of the waste:

- (1) Extremely viscous liquid: ASTM Standard D140-70
- (2) Crushed or powdered material: ASTM Standard D346-75
- (3) Soil or rock-like material: ASTM Standard D420-69
- (4) Soil-like material: ASTM Standard D1452-65
- (5) Fly Ash-like material: ASTM Standard D2234-76

NOTE: ASTM Standards are available from ASTM, 1916 Race St., Philadelphia, PA, 19103

(6) Containerized liquid wastes: "COLIWASA" described in Test Methods for Evaluating Solid Waste, Second Ed., July 1982, (SW-846)⁽¹⁾ U.S. Environmental Protection Agency.

NOTE: Copies may be obtained from Solid Waste Information, U.S. Environmental Protection Agency, 26 W. St. Clair St., Cincinnati, Ohio, 45268.

(7) Liquid waste in pits, ponds, lagoons, and similar reservoirs: Dipper (pond sampler) described in Test Methods for Evaluating Solid Waste, Second Ed., July 1982.

(1) These methods are also described in Samplers and Sampling Procedures for Hazardous Waste Streams, EPA 600/2-80-018, January 1980.

Appendix 101.2: EP Toxicity Test Procedure

(A) Extraction Procedure (EP)

(1) A representative sample of the waste to be tested (minimum size 100 grams) shall be obtained using the methods specified in Appendix 101.1 or any other methods capable of yielding a representative sample. (For detailed guidance on conducting the various aspects of the EP see Test Methods for Evaluating Solid Waste, Second Ed., July 1982, (SW-846))⁽¹⁾

(2) The sample shall be separated into its component liquid and solid phases using the method described in "Separation Procedure" (B) below. If the solid residue⁽²⁾ obtained using this method totals less than 0.5% of the original weight of the waste, the residue can be discarded and the operator shall treat the liquid phase as the extract and proceed immediately to Step 8.

(3) The solid material obtained from the Separation Procedure shall be evaluated for its particle size. If the solid material has a surface area per gram of material equal to, or greater than, 3.1 cm² or passes through a 9.5 mm (0.375 inch) standard sieve, the operator shall proceed to Step 4. If the surface area is smaller or the particle size larger than specified above, the solid material shall be prepared for extraction by crushing, cutting or grinding the material so that it passes through a 9.5 mm (0.375 inch) sieve or, if the material is in a single piece, by subjecting the material to the "Structural Integrity Procedure" (C) described below.

(4) The solid material obtained in Step 3 shall be weighed and placed in an extractor with 16 times its weight of deionized water. Do not allow the material to dry prior to weighing. For purposes of this test, an acceptable extractor is one which will impart sufficient agitation to the mixture to not only prevent stratification of the sample and extraction fluid but also insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid.

(5) After the solid material and deionized water are placed in the extractor, the operator shall begin agitation and measure the pH of the solution in the extractor. If the pH is greater than 5.0, the pH of the solution shall be decreased to 5.0 ± 0.2 by adding 0.5 N acetic acid. If the pH is equal to or less than 5.0, no acetic acid should be added. The pH of the solution shall be monitored, as described below, during the course of the extraction and if the pH rises above 5.2, 0.5 N acetic acid shall be added to bring the pH down to 5.0 ± 0.2. However, in no event shall the aggregate amount of acid added to the solution exceed 4 ml of acid per gram of solid. The mixture shall be agitated for 24 hours and maintained at 20°-40°C (68°-104°F) during this time. It is recommended

(1) Test Methods for Evaluating Solid Waste, Second Ed., July 1982, Solid Waste Information, U.S. Environmental Protection Agency, 26 W. St. Clair St., Cincinnati, Ohio, 45268 (SW-846)

(2) The percent solids is determined by drying the filter pad at 80° C until it reaches constant weight and then calculating the percent solids using the following equation:

$$\text{Percent solids} = \frac{(\text{weight of pad} + \text{solids}) - (\text{tare weight of pad})}{\text{initial weight of sample}} \times 100$$

that the operator monitor and adjust the pH during the course of the extraction with a device such as the Type 45-A pH Controller manufactured by Chemtrix, Inc., Hillsboro, Oregon, 97123, or its equivalent, in conjunction with a metering pump and reservoir of 0.5 N acetic acid. If such a system is not available, the following manual procedure shall be employed: (a) A pH meter shall be calibrated in accordance with the manufacturer's specifications.

(b) The pH of the solution shall be checked and, if necessary, 0.5 N acetic acid shall be manually added to the extractor until the pH reaches 5.0 ± 0.2 . The pH of the solution shall be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5 N pH units.

(c) The adjustment procedure shall be continued for at least 6 hours.

(d) If at the end of the 24-hour extraction period, the pH of the solution is not below 5.2 and the maximum amount of acid (4 ml per gram of solids) has not been added, the pH shall be adjusted to 5.0 ± 0.2 and the extraction continued for an additional four hours, during which the pH shall be adjusted at one hour intervals.

(6) At the end of the 24 hour extraction period, deionized water shall be added to the extractor in an amount determined by the formula:

$$V = 4W - A; \text{ where}$$

V = ml deionized water to be added

W = weight in grams of solid charged to extractor

A = ml of 0.5 N acetic acid added during extraction

(7) The material in the extractor shall be separated into its component liquid and solid phases as described under "Separation Procedure" (B).

(8) The liquids resulting from Steps 2 and 7 shall be combined. This combined liquid (or the waste itself if it has less than 1/2 percent solids, as noted in Step 2) is the extract and shall be analyzed for the presence of any of the contaminants specified in Table 1 of rule 340-101-140 using the Analytical Procedures specified in Test Methods for Evaluating Solid Waste, Second Ed., July 1982, (SW-846).

(B) Separation Procedure

Equipment: A filter holder, designed for filtration media having a nominal pore size of 0.45 micrometers and capable of applying a 75 psi (5.3 kg/cm²) hydrostatic pressure to the solution being filtered shall be used. For mixtures containing nonabsorptive solids, where separation can be affected without imposing a 75 psi pressure differential, vacuum filters employing a 0.45 micrometers filter media can be used. (For further guidance on filtration equipment or procedures see Test Methods for Evaluating Solid Waste, Second Ed., July 1982 (SW-846).

Procedure:(3)

(1) Following manufacturer's directions, the filter unit shall be assembled with a filter bed consisting of a 0.45 micrometer filter membrane. For difficult or slow to filter mixtures a prefilter bed consisting of the following prefilters in increasing pore size (0.65 micrometer membrane, fine glass fiber prefilter, and coarse glass filter prefilter) can be used.

(2) The waste shall be poured into the filtration unit.

(3) The reservoir shall be slowly pressurized until liquid begins to flow from the filtrate outlet at which point the pressure in the filter shall be immediately lowered to 10-15 psig. Filtration shall be continued until liquid flow ceases.

(4) The pressure shall be increased stepwise in 10 psi increments to 75 psig and filtration continued until flow cease or the pressurizing gas begins to exit from the filtrate outlet.

(5) The filter unit shall be depressurized, the solid material removed and weighed and then transferred to the extraction apparatus, or, in the case of final filtration prior to analysis, discarded. Do not allow the material retained on the filter pad to dry prior to weighing.

(6) The liquid phase shall be stored at 4° C for subsequent use in Part A, Step 8.

(C) Structural Integrity Procedure

Equipment: A Structural Integrity Tester having a 3.18 cm (1.25 in.) diameter hammer weighing 0.33 kg (0.73 lbs.) and having a free fall of 15.24 cm (6 in.) shall be used. This device is available from Associated Design and Manufacturing Company, Alexandria, VA, 22314, as Part No. 125, or it may be fabricated to meet the specifications shown in Figure 1.

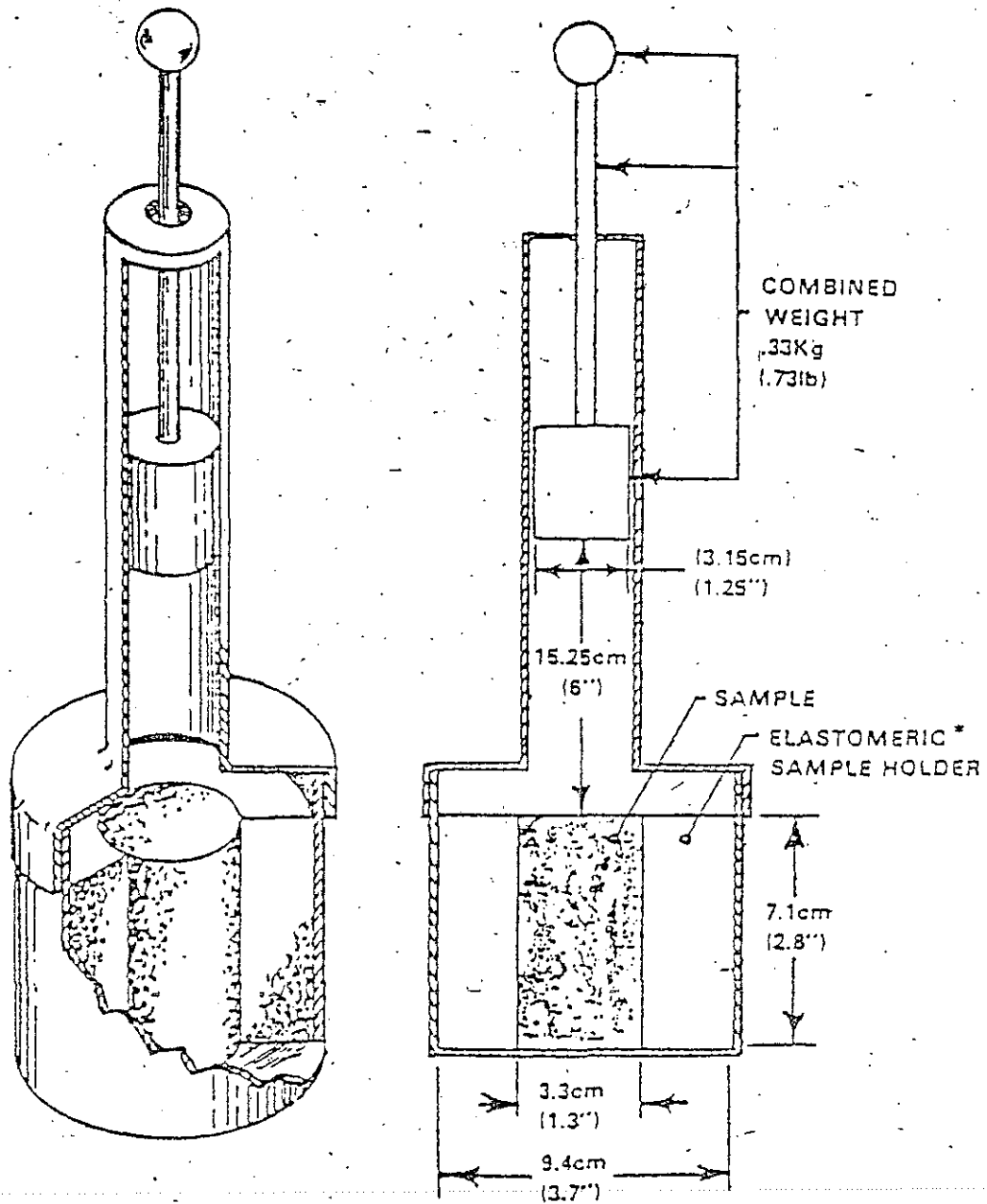
Procedure:

(1) The sample holder shall be filled with the material to be tested. If the sample of waste is a large monolithic block, a portion shall be cut from the block having the dimensions of a 3.3 cm (1.3 in) diameter x 7.1 cm (2.8 in) cylinder. For a fixated waste, samples may be cast in the form of a 3.3 cm (1.3 in) diameter x 7.1 cm (2.8 in) cylinder for purposes of conducting this test. In such cases, the waste may be allowed to cure for 30 days prior to further testing.

(3) This procedure is intended to result in separation of the "free" liquid portion of the waste from any solid matter having a particle size > 0.45 um. If the sample will not filter, various other separation techniques can be used to aid in the filtration. As described above, pressure filtration is employed to speed up the filtration process. This does not alter the nature of the separation. If liquid does not separate during filtration, the waste can be centrifuged. If separation occurs during centrifugation the liquid portion (centrifugate) is filtered through the 0.45 um filter prior to becoming mixed with the liquid portion of the waste obtained from the initial filtration. Any material that will not pass through the filter after centrifugation is considered a solid and is extracted.

(2) The sample holder shall be placed into the Structural Integrity Tester, then the hammer shall be raised to its maximum height and dropped. This shall be repeated fifteen times.

(3) The material shall be removed from the sample holder, weighed, and transferred to the extraction apparatus for extraction.



*ELASTOMERIC SAMPLE HOLDER FABRICATED OF MATERIAL FIRM ENOUGH TO SUPPORT THE SAMPLE

Figure 1

STRUCTURAL INTEGRITY TESTER

Appendix 101.3

- dtone, 6-amino-8-((amino-carbonyl)oxy)methyl]-1,1a,2,3,8a,8b-hexahydro-8-methoxy-5-methyl-5-(Aminomethyl)-3-isoxazolol (3(2H)-isoxazolone, 5-(aminomethyl)-4-aminopyridine (4-Pyridinamine)
 Amitrole (1H-1,2,4-Triazol-3-amine)
 Aniline (Benzenamine)
 Antimony and compounds, N.O.S.*
 Aramite (Sulfurous acid, 2-chloroethyl-, 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester)
 Arsenic and compounds, N.O.S.*
 Arsenic acid (Orthoarsenic acid)
 Arsenic pentoxide (Arsenic (V) oxide)
 Arsenic trioxide (Arsenic (III) oxide)
 Argamine (Benzenamine, 4,4'-carbonimidoylbis[N,N-Dimethyl-, monohydrochloride])
 Azaserine (L-Serine, diazoacetate (ester))
 Barium and compounds, N.O.S.*
 Barium cyanide
 Benz[c]acridine (3,4-Benzacridine)
 Benz[a]anthracene (1,2-Benzanthracene)
 Benzene (Cyclohexatriene)
 Benzenearsonic acid (Arsonic acid, phenyl-)
 Benzene, dichloromethyl- (Benzal chloride)
 Benzenethiol (Thiophenol)
 Benzidine ([1,1'-Biphenyl]-4,4'-diamine)
 Benzo[b]fluoranthene (2,3-Benzofluoranthene)
 Benzo[j]fluoranthene (7,8-Benzofluoranthene)
 Benzo[a]pyrene (3,4-Benzopyrene)
 p-Benzoquinone (1,4-Cyclohexadienedione)
 Benzotrifluoride (Benzene, trichloromethyl-)
 Benzyl chloride (Benzene, (chloromethyl)-)
 Beryllium and compounds, N.O.S.*
 Bis(2-chloroethoxy)methane (Ethane, 1,1'-methylenebis(oxy))bis(2-chloro-))
 Bis(2-chloroethyl) ether (Ethane, 1,1'-oxybis(2-chloro-))
 N,N-Bis(2-chloroethyl)-2-naphthylamine (Chloronaphazine)
 Bis(2-chloroisopropyl) ether (Propane, 2,2'-oxybis(2-chloro-))
 Bis(chloromethyl) ether (Methane, oxybis(chloro-))
 Bis(2-ethylhexyl) phthalate (1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester)
 Bromoacetone (2-Propanone, 1-bromo-)
 Bromomethane (Methyl bromide)
 4-Bromophenyl phenyl ether (Benzene, 1-bromo-4-phenoxy-)
 Brucine (Strychnidin-10-one, 2,3-dimethoxy-)
 2-Butanone peroxide (Methyl ethyl ketone, peroxide)
 Butyl benzyl phthalate (1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester)
 2-sec-Butyl-4,6-dinitrophenol (DNBP) (Phenol, 2,4-dinitro-6-(1-methylpropyl)-)
 Cadmium and compounds, N.O.S.*
 Calcium chromate (Chromic acid, calcium salt)
 Calcium cyanide
 Carbon disulfide (Carbon bisulfide)
 Carbon oxyfluoride (Carbonyl fluoride)
 Chloral (Acetaldehyde, trichloro-)
 Chlorambucil (Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene-)
 Chlordane (alpha and gamma isomers) (4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3,4,7,7a-tetrahydro-) (alpha and gamma isomers)
 Chlorinated benzenes, N.O.S.*
 Chlorinated ethane, N.O.S.*
 Chlorinated fluorocarbons, N.O.S.*
 Chlorinated naphthalene, N.O.S.*
 Chlorinated phenol, N.O.S.*
 Chloroacetaldehyde (Acetaldehyde, chloro-)
 Chloroalkyl ethers, N.O.S.*
 p-Chloroaniline (Benzenamine, 4-chloro-)
 Chlorobenzene (Benzene, chloro-)*
 Chlorobenzilate (Benzenesacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester)
 p-Chloro-m-cresol (Phenol, 4-chloro-3-methyl)
 1-Chloro-2,3-epoxypropane (Oxirane, 2-(chloromethyl)-)
 2-Chloroethyl vinyl ether (Ethene, (2-chloroethoxy)-)
 Chloroform (Methane, trichloro-)
 Chloromethane (Methyl chloride)
 Chloromethyl methyl ether (Methane, chloromethoxy-)
 2-Chloronaphthalene (Naphthalene, beta-chloro-)
 2-Chlorophenol (Phenol, o-chloro-)
 1-(o-Chlorophenyl)thiourea (Thiourea, (2-chlorophenyl)-)
 3-Chloropropionitrile (Propanenitrile, 3-chloro-)
 Chromium and compounds, N.O.S.*
 Chrysene (1,2-Benzphenanthrene)
 Citrus red No. 2 (2-Naphthol, 1-((2,5-dimethoxyphenyl)azo)-)
 Coal tars
 Copper cyanide
 Creosote (Creosote, wood)
 Cresols (Cresylic acid) (Phenol, methyl-)
 Crotonaldehyde (2-Butenal)
 Cyanides (soluble salts and complexes), N.O.S.*
 Cyanogen (Ethanedinitrile)
 Cyanogen bromide (Bromine cyanide)
 Cyanogen chloride (Chlorine cyanide)
 Cycasin (beta-D-Glucopyranoside, (methyl-ONN-azoxy)methyl-)
 2-Cyclohexyl-4,6-dinitrophenol (Phenol, 2-cyclohexyl-4,6-dinitro-)
 Cyclophosphamide (2H-1,3,2-, Oxazaphosphorine, [bis(2-chloroethyl)amino]-tetrahydro-, 2-oxide)
 Daunomycin (5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[[3-amino-2,3,8-trideoxy]-alpha-L-lyxo-hexopyranosyl]oxy)-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-)
 DDD (Dichlorodiphenyldichloroethane) (Ethane, 1,1-dichloro-2,2-bis(p-chlorophenyl)-)
 DDE (Ethylene, 1,1-dichloro-2,2-bis(4-chlorophenyl)-)
 DDT (Dichlorodiphenyltrichloroethane) (Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)-)
 Diallate (S-(2,3-dichloroallyl) diisopropylthiocarbamate)
 Dibenz[a,h]acridine (1,2,5,8-Dibenzacridine)
 Dibenz[a,j]acridine (1,2,7,8-Dibenzacridine)
 Dibenz[a,h]anthracene (1,2,5,8-Dibenzanthracene)
 7H-Dibenzo[c,g]carbazole (3,4,5,6-Dibenzcarbazole)
 Dibenzo[a,e]pyrene (1,2,4,5-Dibenzpyrene)
 Dibenzo[a,h]pyrene (1,2,5,8-Dibenzpyrene)
 Dibenzo[a,i]pyrene (1,2,7,8-Dibenzpyrene)

* The abbreviation N.O.S. (not otherwise specified) signifies those members of the general class not specifically listed by name in this appendix.

- 1,2-Dibromo-3-chloropropane (Propane, 1,2-dibromo-3-chloro-)
 1,2-Dibromoethane (Ethylene dibromide)
 Dibromomethane (Methylene bromide)
 Di-n-butyl phthalate (1,2-Benzenedicarboxylic acid, dibutyl ester)
 o-Dichlorobenzene (Benzene, 1,2-dichloro-)
 m-Dichlorobenzene (Benzene, 1,3-dichloro-)
 p-Dichlorobenzene (Benzene, 1,4-dichloro-)
 Dichlorobenzene, N.O.S.* (Benzene, dichloro-, N.O.S.*)
 3,3'-Dichlorobenzidine ([1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-)
 1,4-Dichloro-2-butene (2-Butene, 1,4-dichloro-)
 Dichlorodifluoromethane (Methane, dichlorodifluoro-)
 1,1-Dichloroethane (Ethylidene dichloride)
 1,2-Dichloroethane (Ethylene dichloride)
 trans-1,2-Dichloroethane (1,2-Dichloroethylene)
 Dichloroethylene, N.O.S.* (Ethene, dichloro-, N.O.S.*)
 1,1-Dichloroethylene (Ethene, 1,1-dichloro-)
 Dichloromethane (Methylene chloride)
 2,4-Dichlorophenol (Phenol, 2,4-dichloro-)
 2,6-Dichlorophenol (Phenol, 2,6-dichloro-)
 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (Acetic acid, 2,4-dichlorophenoxy-, salts and esters)
 Dichlorophenylarsine (Phenyl dichloroarsine)
 Dichloropropane, N.O.S.* (Propane, dichloro-, N.O.S.*)
 1,2-Dichloropropane (Propylene dichloride)
 Dichloropropanol, N.O.S.* (Propanol, dichloro-, N.O.S.*)
 Dichloropropene, N.O.S.* (Propene, dichloro-, N.O.S.*)
 1,3-Dichloropropene (1-Propene, 1,3-dichloro-)
 Dieldrin (1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octa-hydro-endo,exo-1,4:5,8-Dimethanonaphthalene)
 1,2,3,4-Diepoxybutane (2,2'-Bioxirane)
 Diethylarsine (Arsine, diethyl-)
 N,N-Diethylhydrazine (Hydrazine, 1,2-diethyl)
 O,O-Diethyl S-methyl ester of phosphorodithioic acid (Phosphorodithioic acid, O,O-diethyl S-methyl ester)
 O,O-Diethylphosphoric acid, O-p-nitrophenyl ester (Phosphoric acid, diethyl p-nitrophenyl ester)
 Diethyl phthalate (1,2-Benzenedicarboxylic acid, diethyl ester)
 O,O-Diethyl O-2-pyrazinyl phosphorothioate (Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester)
 Diethylsulfesterol (4,4'-Stilbene diol, alpha, alpha-diethyl, bis(dihydrogen phosphate, E)-)
 Dihydrosafrole (Benzene, 1,2-methylenedioxy-4-propyl-)
 3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol (1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-)
 Diisopropylfluorophosphate (DFP) (Phosphorofluoric acid, bis(1-methylethyl) ester)
 Dimethoate (Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester)
 3,3'-Dimethoxybenzidine ([1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-)
 p-Dimethylaminoazobenzene (Benzenamine, N,N-dimethyl-4-(phenylazo)-)
 7,12-Dimethylbenz[a]anthracene (1,2-Benzanthracene, 7,12-dimethyl-)
 3,3'-Dimethylbenzidine ([1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-)
 Dimethylcarbamoyl chloride (Carbamoyl chloride, dimethyl-)
 1,1-Dimethylhydrazine (Hydrazine, 1,1-dimethyl-)
 1,2-Dimethylhydrazine (Hydrazine, 1,2-dimethyl-)
 3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino) carbonyl]oxime (Thiofanox)
 alpha, alpha-Dimethylphenethylamine (Ethanamine, 1,1-dimethyl-2-phenyl-)
 2,4-Dimethylphenol (Phenol, 2,4-dimethyl-)
 Dimethyl phthalate (1,2-Benzenedicarboxylic acid, dimethyl ester)
 Dimethyl sulfate (Sulfuric acid, dimethyl ester)
 Dinilrobenzene, N.O.S.* (Benzene, dinitro-, N.O.S.*)
 4,6-Dinitro-o-cresol and salts (Phenol, 2,4-dinitro-6-methyl-, and salts)
 2,4-Dinitrophenol (Phenol, 2,4-dinitro-)
 2,4-Dinitrotoluene (Benzene, 1-methyl-2,4-dinitro-)
 2,6-Dinitrotoluene (Benzene, 1-methyl-2,6-dinitro-)
 Di-n-octyl phthalate (1,2-Benzenedicarboxylic acid, dioctyl ester)
 1,4-Dioxane (1,4-Diethylene oxide)
 Diphenylamine (Benzenamine, N-phenyl-)
 1,2-Diphenylhydrazine (Hydrazine, 1,2-diphenyl-)
 Di-n-propylnitrosamine (N-Nitroso-di-n-propylamine)
 Disulfoton (O,O-diethyl S-[2-(ethylthio)ethyl] phosphorodithioate)
 2,4-Dithiobiuret (Thioimidodicarbonic diamide)
 Endosulfan (5-Norbornene, 2,3-dimethanol, 1,4,5,6,7,7-hexachloro-, cyclic sulfite)
 Endrin and metabolites (1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octa-hydro-endo,endo-1,4:5,8-dimethanonaphthalene, and metabolites)
 Ethyl carbamate (Urethan) (Carbamic acid, ethyl ester)
 Ethyl cyanide (propanenitrile)
 Ethylenebisdithiocarbamic acid, salts and esters (1,2-Ethanediyldithiocarbamic acid, salts and esters)
 Ethyleneimine (Aziridine)
 Ethylene oxide (Oxirane)
 Ethylenethiourea (2-Imidazolidinethione)
 Ethyl methacrylate (2-Propenoic acid, 2-methyl-, ethyl ester)
 Ethyl methanesulfonate (Methanesulfonic acid, ethyl ester)
 Fluoranthene (Benzo[*k*]fluorene)
 Fluorine
 2-Fluoroacetamide (Acetamide, 2-fluoro-)
 Fluoroacetic acid, sodium salt (Acetic acid, fluoro-, sodium salt)
 Formaldehyde (Methylene oxide)
 Formic acid (Methanoic acid)
 Glycidylaldehyde (1-Propanol-2,3-epoxy)
 Halomethane, N.O.S.*
 Heptachlor (4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-)
 Heptachlor epoxide (alpha, beta, and gamma isomers) (4,7-Methano-1H-indene, 1,4,5,6,7,3,8-heptachloro-2,3-epoxy-3a,4,7,7-tetrahydro-, alpha, beta, and gamma isomers)
 Hexachlorobenzene (Benzene, hexachloro-)
 Hexachlorobutadiene (1,3-Butadiene, 1,1,2,3,4,4-hexachloro-)
 Hexachlorocyclohexane (all isomers) (Lindane and isomers)
 Hexachlorocyclopentadiene (1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-)
 Hexachloroethane (Ethane, 1,1,1,2,2,2-hexachloro-)
 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,endo-dimethanonaphthalene (Hexachlorohexahydro-endo,endo-dimethanonaphthalene)
 Hexachlorophene (2,2'-Methylenebis(3,4,6-trichlorophenol))
 Hexachloropropene (1-Propene, 1,1,2,3,3,3-hexachloro-)
 Hexaethyl tetraphosphate (Tetraphosphoric acid, hexaethyl ester)
 Hydrazine (Diamine)
 Hydrocyanic acid (Hydrogen cyanide)
 Hydrofluoric acid (Hydrogen fluoride)
 Hydrogen sulfide (Sulfur hydride)
 Hydroxydimethylarsine oxide (Cacodylic acid)
 Indeno(1,2,3-cd)pyrene (1,10-(1,2-phenylene)pyrene)
 Iodomethane (Methyl iodide)
 Iron dextran (Ferric dextran)
 Isocyanic acid, methyl ester (Methyl isocyanate)
 Isobutyl alcohol (1-Propanol, 2-methyl-)
 Isosafrole (Benzene, 1,2-methylenedioxy-4-allyl-)
 Kepone (Decachlorooctahydro-1,3,4-Methano-2H-cyclobuta[*cd*]pentalen-2-one)
 Lasiocarpine (2-Butenoic acid, 2-methyl-, 7-[(2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy)methyl]-2,3,5,7a-tetrahydro-1H-pyrolizin-7-yl ester)
 Lead and compounds, N.O.S.*
 Lead acetate (Acetic acid, lead salt)
 Lead phosphate (Phosphoric acid, lead salt)
 Lead subacetate (Lead, bis(acetato-O)tetrahydroxytri-)
 Maleic anhydride (2,5-Furandione)
 Maleic hydrazide (1,2-Dihydro-3,6-pyridazinedione)
 Malononitrile (Propanedinitrile)
 Melphaan (Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-, L-)
 Mercury fulminate (Fulminic acid, mercury salt)
 Mercury and compounds, N.O.S.*
 Methacrylonitrile (2-Propenenitrile, 2-methyl-)
 Methanethiol (Thiomethanol)
 Methapyriene (Pyridine, 2-[(2-dimethylamino)ethyl]-2-thenylamino-)
 Metholmyl (Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester)
 Methoxychlor (Ethane, 1,1,1-trichloro-2,2'-bis(p-methoxyphenyl)-)
 2-Methylaziridine (1,2-Propylenimine)
 3-Methylcholanthrene (Benz[*j*]aceanthrylene, 1,2-dihydro-3-methyl-)
 Methyl chlorocarbonate (Carbonochloridic acid, methyl ester)
 4,4'-Methylenebis(2-chloroaniline) (Benzenamine, 4,4'-methylenebis(2-chloro-))
 Methyl ethyl ketone (MEK) (2-Butanone)
 Methyl hydrazine (Hydrazine, methyl-)
 2-Methylactonitrile (Propanenitrile, 2-hydroxy-2-methyl-)
 Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)

- Methyl methanesulfonate (Methanesulfonic acid, methyl ester)
- 2-Methyl-2-(methylthio)propionaldehyde-o-(methylcarbonyl) oxime (Propanal, 2-methyl-2-(methylthio)-, O-((methylamino)carbonyl)oxime)
- N-Methyl-N'-nitro-N-nitrosoguanidine (Guanidine, N-nitroso-N-methyl-N'-nitro-)
- Methyl parathion (O,O-dimethyl O-(4-nitrophenyl) phosphorothioate)
- Methylthiouracil (4-1H-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-)
- Mustard gas (Sulfide, bis(2-chloroethyl)-)
- Naphthalene
- 1,4-Naphthoquinone (1,4-Naphthalenedione)
- 1-Naphthylamine (alpha-Naphthylamine)
- 2-Naphthylamine (beta-Naphthylamine)
- 1-Naphthyl-2-thiourea (Thiourea, 1-naphthalenyl-)
- Nickel and compounds, N.O.S.*
- Nickel carbonyl (Nickel tetracarbonyl)
- Nickel cyanide (Nickel (II) cyanide)
- Nicotine and salts (Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts)
- Nitric oxide (Nitrogen (II) oxide)
- p-Nitroaniline (Benzenamine, 4-nitro-)
- Nitrobenzene (Benzene, nitro-)
- Nitrogen dioxide (Nitrogen (IV) oxide)
- Nitrogen mustard and hydrochloride salt (Ethanamine, 2-chloro-, N-(2-chloroethyl)-N-methyl-, and hydrochloride salt)
- Nitrogen mustard N-Oxide and hydrochloride salt (Ethanamine, 2-chloro-, N-(2-chloroethyl)-N-methyl-, and hydrochloride salt)
- Nitroglycerine (1,2,3-Propanetriol, trinitrate)
- 4-Nitrophenol (Phenol, 4-nitro-)
- 4-Nitroquinoline-1-oxide (Quinoline, 4-nitro-1-oxide-)
- Nitrosamine, N.O.S.*
- N-Nitrosodi-n-butylamine (1-Butanamine, N-butyl-N-nitroso-)
- N-Nitrosodiethanolamine (Ethanol, 2,2'-(nitrosimino)bis-)
- N-Nitrosodiethylamine (Ethanamine, N-ethyl-N-nitroso-)
- N-Nitrosodimethylamine (Dimethylnitrosamine)
- N-Nitroso-N-ethylurea (Carbamide, N-ethyl-N-nitroso-)
- N-Nitrosomethylethylamine (Ethanamine, N-methyl-N-nitroso-)
- N-Nitroso-N-methylurea (Carbamide, N-methyl-N-nitroso-)
- N-Nitroso-N-methylurethane (Carbamic acid, methylnitroso-, ethyl ester)
- N-Nitrosomethylvinylamine (Ethenamine, N-methyl-N-nitroso-)
- N-Nitrosomorpholine (Morpholine, N-nitroso-)
- N-Nitrosornicotine (Nicotinic acid, N-nitroso-)
- N-Nitrosopiperidine (Pyridine, hexahydro-, N-nitroso-)
- Nitrosopyrrolidine (Pyrrole, tetrahydro-, N-nitroso-)
- N-Nitrososarcosine (Sarcosine, N-nitroso-)
- 5-Nitro-o-toluidine (Benzenamine, 2-methyl-5-nitro-)
- Octamethylpyrophosphoramide (Diphosphoramide, octamethyl-)
- Osmium tetroxide (Osmium (VIII) oxide)
- 7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid (Endothal)
- Paraldehyde (1,3,5-Trioxane, 2,4,6-trimethyl-)
- Parathion (Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl) ester)
- Pentachlorobenzene (Benzene, pentachloro-)
- Pentachloroethane (Ethane, pentachloro-)
- Pentachloronitrobenzene (PCNB) (Benzene, pentachloronitro-)
- Pentachlorophenol (Phenol, pentachloro-)
- Phenacetin (Acetamide, N-(4-ethoxyphenyl)-)
- Phenol (Benzene, hydroxy-)
- Phenylenediamine (Benzenediamine)
- Phenylmercury acetate (Mercury, acetatophenyl-)
- N-Phenylthiourea (Thiourea, phenyl-)
- Phosgene (Carbonyl chloride)
- Phosphine (Hydrogen phosphide)
- Phosphorodithioic acid, O,O-diethyl S-((ethylthio)methyl) ester (Phorate)
- Phosphorothioic acid, O,O-dimethyl O-(p-((dimethylamino)sulfonyl)phenyl) ester (Famphur)
- Phthalic acid esters, N.O.S.* (Benzene, 1,2-dicarboxylic acid, esters, N.O.S.*)
- Phthalic anhydride (1,2-Benzenedicarboxylic acid anhydride)
- 2-Picoline (Pyridine, 2-methyl-)
- Polychlorinated biphenyl, N.O.S.*
- Potassium cyanide
- Potassium silver cyanide (Argentate(1-), dicyano-, potassium)
- Pronamide (3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide)
- 1,3-Propane sultone (1,2-Oxathiolane, 2,2-dioxide)
- n-Propylamine (1-Propanamine)
- Propylthiouracil (Undecamethylenediamine, N,N'-bis(2-chlorobenzyl)-, dihydrochloride)
- 2-Propyn-1-ol (Propargyl alcohol)
- Pyridine
- Reserpine (Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-((3,4,5-trimethoxybenzoyl)oxy)-, methyl ester)
- Resorcinol (1,3-Benzenediol)
- Saccharin and salts (1,2-Benzothiazolin-3-one, 1,1-dioxide, and salts)
- Safrole (Benzene, 1,2-methylenedioxy-4-allyl-)
- Selenious acid (Selenium dioxide)
- Selenium and compounds, N.O.S.*
- Selenium sulfide (Sulfur selenide)
- Selenourea (Carbamimidoseleonic acid)
- Silver and compounds, N.O.S.*
- Silver cyanide
- Sodium cyanide
- Streptozotocin (D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-)
- Strontium sulfide
- Strychnine and salts (Strychnidin-10-one, and salts)
- 1,2,4,5-Tetrachlorobenzene (Benzene, 1,2,4,5-tetrachloro-)
- 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (Dibenzo-p-dioxin, 2,3,7,8-tetrachloro-)
- Tetrachloroethane, N.O.S.* (Ethane, tetrachloro-, N.O.S.*)
- 1,1,1,2-Tetrachloroethane (Ethane, 1,1,1,2-tetrachloro-)
- 1,1,2,2-Tetrachloroethane (Ethane, 1,1,2,2-tetrachloro-)
- Tetrachlorethane (Ethene, 1,1,2,2-tetrachloro-)
- Tetrachloromethane (Carbon tetrachloride)
- 2,3,4,6-Tetrachlorophenol (Phenol, 2,3,4,6-tetrachloro-)
- Tetraethylthiopyrophosphate (Dithiopyrophosphoric acid, tetraethyl-ester)
- Tetraethyl lead (Plumbane, tetraethyl-)
- Tetraethylpyrophosphate (Pyrophosphoric acid, tetraethyl ester-)
- Tetranitromethane (Methane, tetranitro-)
- Thallium and compounds, N.O.S.*
- Thallic oxide (Thallium (III) oxide)
- Thallium (I) acetate (Acetic acid, thallium (I) salt)
- Thallium (I) carbonate (Carbonic acid, thallium (I) salt)
- Thallium (I) chloride
- Thallium (I) nitrate (Nitric acid, thallium (I) salt)
- Thallium selenite
- Thallium (I) sulfate (Sulfuric acid, thallium (I) salt)
- Thioacetamide (Ethanethioamide)
- Thiosemicarbazide (Hydrazinecarbothioamide)
- Thiourea (Carbamide thio-)
- Thiuram (Bis(dimethylthiocarbonyl) disulfide)
- Toluene (Benzene, methyl-)
- Toluenediamine (Diaminotoluene)
- o-Toluidine hydrochloride (Benzenamine, 2-methyl-, hydrochloride)
- Tolylene diisocyanate (Benzene, 1,3-diisocyanatomethyl-)
- Toxaphene (Camphene, octachloro-)
- Tribromomethane (Bromoform)
- 1,2,4-Trichlorobenzene (Benzene, 1,2,4-trichloro-)
- 1,1,1-Trichloroethane (Methyl chloroform)
- 1,1,2-Trichloroethane (Ethane, 1,1,2-trichloro-)
- Trichloroethene (Trichloroethylene)
- Trichloromethanethiol (Methanethiol, trichloro-)
- Trichloromono-fluoromethane (Methane, trichloro-fluoro-)
- 2,4,5-Trichlorophenol (Phenol, 2,4,5-trichloro-)
- 2,4,6-Trichlorophenol (Phenol, 2,4,6-trichloro-)
- 2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (Acetic acid, 2,4,5-trichlorophenoxy-)
- 2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex) (Propionic acid, 2-(2,4,5-trichlorophenoxy)-)
- Trichloropropane, N.O.S.* (Propane, trichloro-, N.O.S.*)
- 1,2,3-Trichloropropane (Propane, 1,2,3-trichloro-)
- O,O,O-Triethyl phosphorothioate (Phosphorothioic acid, O,O,O-triethyl ester)
- sym-Trinitrobenzene (Benzene, 1,3,5-trinitro-)
- Tris(1-aziridinyl) phosphine sulfide (Phosphine sulfide, tris(1-aziridinyl-))
- Tris(2,3-dibromopropyl) phosphate (1-Propanol, 2,3-dibromo-, phosphate)
- Trypan blue (2,7-Naphthalenedisulfonic acid, 3,3'-((3,3'-dimethyl(1,1'-biphenyl)-4,4'-diyl)bis(azo))bis(5-amino-4-hydroxy-, tetrasodium salt)
- Uracil mustard (Uracil 5-[bis(2-chloroethyl)amino]-)
- Vanadic acid, ammonium salt (ammonium vanadate)
- Vanadium pentoxide (Vanadium (V) oxide)
- Vinyl chloride (Ethene, chloro-)
- Zinc cyanide
- Zinc phosphide
- hexachlorodibenzo-p-dioxins
- hexachlorodibenzofurans
- pentachlorodibenzo-p-dioxins
- pentachlorodibenzofurans
- tetrachlorodibenzo-p-dioxins
- tetrachlorodibenzofurans

Appendix 101.4: Chemical Analysis Test Methods

Tables 1, 2, and 3 specify the appropriate analytical procedures, described in Test Methods for Evaluating Solid Waste, Second Ed., (SW-846), July 1982, which shall be used in determining whether the waste in question contains a given toxic constituent. Table 1 identifies the analytical class and the approved measurement techniques for each organic chemical listed in Appendix 101.5. Table 2 identifies the corresponding methods for the inorganic species. Table 3 identifies the specific sample preparation and measurement instrument introduction techniques which may be suitable for both the organic and inorganic species as well as the matrices of concern.

Prior to final selection of the analytical method the operator should consult the specific method descriptions in SW-846 for additional guidance on which of the approved methods should be employed for a specific waste analysis situation.

Table 1: Analytical Characteristics of Organic Chemicals

Compound	Sample handling class/fraction	Non-GC methods	Measurement techniques		
			GC/MS	GC	Conventional Detector
Acetonitrile.....	Volatile.....	.....	8240	8030	NSD
Acrolein.....	Volatile.....	.....	8240	8030	NSD
Acrylamide.....	Volatile.....	.....	8240	28010	FID
Acrylonitrile.....	Volatile.....	.....	8240	8030	NSD
Benzene.....	Volatile.....	.....	8240	8020	PID
Benz(a)anthracene.....	Extractable/BN.....	8100 (HPLC)	8250	38100	FID
Benzo(a)pyrene.....	Extractable/BN.....	8100 (HPLC)	8250	8100	FID
Benzotrichloride.....	Extractable/BN.....	.....	8250	8120	ECD
Benzyl chloride.....	Volatile or Extractable/BN	.....	8240 8250	8010 8120	HSD ECD
Benz(b)fluocanthene.....	Extractable/BN.....	8100 (HPLC)	8250	8100	FID
Bis(2-chloroethoxymethane)	Volatile.....	.....	8240	8010	HSD
Bis(2-chloroethyl)ether....	Volatile.....	.....	8240	8010	HSD
Bis(2-chloroisopropyl)ether	Volatile.....	.....	8240	8010	HSD
Carbon disulfide.....	Volatile.....	.....	8240	8010	HSD
Carbon tetrachloride.....	Volatile.....	.....	8240	8010	HSD
Chlordane.....	Extractable/BN.....	.....	8250	8080	HSD
Chlorinated dibenzo-p-dioxins	Extractable/BN...	.....	8280	.....	.....
Chlorinated dibenzofurans	Extractable/BN.....	.....	8280	.....	.....
Chlorinated biphenyls.....	Extractable/BN.....	.....	8250	8080	HSD
Chloroacetaldehyde.....	Volatile.....	.....	8240	8010	HSD
Chlorobenzene.....	Volatile.....	.....	8240	8010	HSD
				8020	PID
Chloroform.....	Volatile.....	.....	8240	8010	HSD
Chloromethane.....	Volatile.....	.....	8240	8010	HSD
2-Chlorophenol.....	Extractable/BN.....	.....	8250	8040	FID, ECD
Chrysene.....	Extractable/BN.....	8100 (HPLC)	8250	8100	FID
Creosote.....	Extractable/BN.....	.....	18250	8100	ECD
Cresol(s).....	Extractable/A.....	.....	8250	8040	FID, ECD
Cresylic acid(s).....	Extractable/A.....	.....	8250	8040	FID, ECD
Dichlorobenzene(s).....	Extractable/BN.....	.....	8250	8010	HSD
				8020	PID
				8120	ECD
Dichloroethane(s).....	Volatile.....	.....	8240	8010	HSD
Dichloromethane.....	Volatile.....	.....	8240	8010	HSD
Dichlorophenoxy-acetic acid	Extractable/A.....	.....	8250	8150	HSD
Dichloropropanol.....	Extractable/BN.....	.....	8250	8120	ECD
2,4-Dimethylphenol.....	Extractable/A.....	.....	8250	8040	FID, ECD
Dinitrobenzene.....	Extractable/BN.....	.....	8250	8090	FID, ECD
4,6-Dinitro-o-cresol.....	Extractable/A.....	.....	8250	8040	FID, ECD
2,4-Dinitrotoluene.....	Extractable/BN.....	.....	8250	8090	FID, ECD
Endrin.....	Extractable/P.....	.....	8250	8080	HSD
Ethyl ether.....	Volatile.....	.....	8240	8010	FID
				8020	FID
Formaldehyde.....	Volatile.....	.....	8240	8010	FID
Formic acid.....	Extractable/BN.....	.....	8250	8060	FID
Heptachlor.....	Extractable/P.....	.....	8250	8060	HSD
Hexachlorobenzene.....	Extractable/BN.....	.....	8250	8120	ECD
Hexachlorobutadiene.....	Extractable/BN.....	.....	8250	8120	ECD

Hexachloroethane.....	Extractable/BN.....	8250	8120	ECD
Hexachlorocyclopentadiene..	Extractable/BN.....	8250	8120	ECD
Lindane.....	Extractable/P.....	8250	8080	HSD
Maleic anhydride.....	Extractable/BN.....	8250	8060	ECD, FID
Methanol.....	Volatile.....	8240	8010	FID
Methomyl.....	Extractable/BN..... 8.32 (HPLC)	.....	.....	.....
Methyl ethyl ketone.....	Volatile.....	8250	8010	FID
			8020	FID
Methyl isobutyl ketone.....	Volatile.....	8250	8010	FID
			8020	FID
Naphthalene.....	Extractable/BN.....	8250	8100	FID
Napthoquinone.....	Extractable/BN.....	8250	8060	ECD, FID
			8090	FID
Nitrobenzene.....	Extractable/BN.....	8250	8090	ECD, FID
4-Nitrophenol.....	Extractable/A.....	8240	8040	ECD, FID
Paraldehyde (trimer of acetaldehyde)	Volatile.....	8240	8010	FID
Pentachlorophenol.....	Extractable/A.....	8250	8040	ECD
Phenol.....	Extractable/A.....	8250	8040	ECD, FID
Phorate.....	Extractable/BN.....	.....	8140	FPD
Phosphorodithioic acid esters	Extractable/BN.....	.....	8060	ECD, FID
			8090	ECD, FID
			8140	FPD
Phthalic anhydride.....	Extractable/BN.....	8250	8060	ECD, FID
			8090	ECD, FID
2-Picoline.....	Extractable/BN.....	8250	8060	ECD, FID
			8090	ECD, FID
Pyridine.....	Extractable/BN.....	8250	8060	ECD, FID
			8090	ECD, FID
Tetrachlorobenzene(s).....	Extractable/BN.....	8250	8120	ECD
Tetrachloroethane(s).....	Volatile.....	8240	8010	HSD
Tetrachloroethene.....	Volatile.....	8240	8010	HSD
Tetrachlorophenol.....	Extractable/A.....	8240	8040	ECD
Toluene.....	Volatile.....	8240	8020	PID
Toluenediamine.....	Extractable/BN.....	8250		
Toluene diisocyanate(s)....	Extractable/ nonaqueous	8250	8060	FID
Toxaphene.....	Extractable/P.....	8250	8080	HSD
Trichloroethane.....	Volatile.....	8240	8010	HSD
Trichloroethene(s).....	Volatile.....	8240	8010	HSD
Trichlorofluoromethane.....	Volatile.....	8240	8010	HSD
Trichlorophenol(s).....	Extractable/A.....	8250	8040	HSD
2,4,5-TP (Silvex).....	Extractable/A.....	8250	8150	HSD
Trichloropropane.....	Volatile.....	8240	8010	HSD
Vinyl chloride.....	Volatile.....	8240	8010	HSD
Vinylidene chloride.....	Volatile.....	8240	8010	HSD
Xylene.....	Volatile.....	8240	8020	PID

1 Analyze for phenanthrene and carbazole; if these are present in a ratio between 1:4:1 and 5:1, creosote should be considered present.

2 Method 8010: Also see 8015 and 8020

3 Method 8100: Also see 8310

ECD = Electron capture detector; FID = Flame ionization detector; FPD = Flame photometric detector; HSD = Halide specific detector; HPLC = High pressure liquid chromatography; NSD = Nitrogen-specific detector; PID = Photoionization detector.

Table 2: Analytical Characteristics of Inorganic Species

Species	Sample handling class	Measurement technique	Method number
Antimony...	Digestion.....	Atomic absorbtion-furnace/flame...	7040,7041
Arsenic....	Hydride.....	Atomic absorbtion-flame.....	7060,7061
Barium....	Digestion.....	Atomic absorbtion-furnace/flame...	7080,7081
Cadmium....	Digestion.....	Atomic absorbtion-furnace/flame...	7090,7091
Chromium...	Digestion.....	Atomic absorbtion-furnace/flame...	7190,7191
Cyanides...	Hydrolysis.....	Titrimetry.....	9010
Lead.....	Digestion.....	Atomic absorbtion-furnace/flame...	7420,7421
Mercury....	Cold Vapor.....	Atomic absorbtion.....	7470,7471
Nickel.....	Digestion.....	Atomic absorbtion-furnace/flame...	7520,7521
Selenium...	Hydride digestion	Atomic absorbtion-furnace/flame...	7740,7741
Silver.....	Digestion.....	Atomic absorbtion-furnace/flame...	7760,7761

Table 3: Sample Preparation/Sample Introduction Techniques

Sample handling class	Physical characteristics of waste ¹		
	Fluid	Paste	Solid
Volatile.....	Purge & trap Direct injection	Purge & trap Headspace	Headspace
Semivolatile and nonvolatile	Direct injection Shake out	Shake out	Shake out Soxhlet Sonication
Inorganic.....	Direct injection Digestion Hydride	..... Digestion Hydride	Digestion Hydride

¹ For purposes of this Table, fluid refers to readily pourable liquids, which may or may not contain suspended particles. Paste-like materials, while fluid in the sense of flowability, can be thought of as being thixotropic or plastic in nature, e.g., paints. Solid materials are those wastes which can be handled without a container (i.e., can be piled up without appreciable sagging).

Procedure and Method Number(s)

Digestion--See appropriate procedure for element of interest.
 Headspace--5020
 Hydride--See appropriate procedure for element of interest.
 Purge & Trap--5030
 Shake out--3510
 Sonication--3550
 Soxhlet--3540

Appendix 101.5: Basis for Listing Hazardous Wastes

Hazardous Waste Number	Hazardous constituents for which listed
F001.....	tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorinated fluorocarbons, carbon tetrachloride
F002.....	tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane
F003.....	N.A.
F004.....	cresols and cresylic acid, nitrobenzene
F005.....	toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine
F006.....	cadmium, hexavalent chromium, nickel, cyanide (complexed)
F019.....	hexavalent chromium, cyanide (complexed)
F007.....	cyanide (salts)
F008.....	cyanide (salts)
F009.....	cyanide (salts)
F010.....	cyanide (salts)
F011.....	cyanide (salts)
F012.....	cyanide (complexed)
F020.....	tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; and tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, and amine salts
F021.....	tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; and tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, and amine salts
F022.....	tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; and tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, and amine salts
F023.....	tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; and tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, and amine salts
K001.....	pentachlorophenol, phenol, 2-chlorophenol, p-chloro-m-cresol, 2,4-dimethylphenyl, 2,4-dinitrophenol, trichlorophenols, tetra-chlorophenols, 2,4-dinitrophenol, creosote, chrysene, naphthylene, fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benz(a)anthracene, dibenz(a)anthracene, acenaphthalene
K002.....	hexavalent chromium, lead
K003.....	hexavalent chromium, lead
K004.....	hexavalent chromium
K005.....	hexavalent chromium, lead
K006.....	hexavalent chromium
K007.....	cyanide (complexed), hexavalent chromium
K008.....	hexavalent chromium

K009..... chloroform, formaldehyde, methylene chloride, methyl chloride,
 paraldehyde, formic acid
 K010..... chloroform, formaldehyde, methylene chloride, methyl chloride,
 paraldehyde, formic acid, chloroacetaldehyde
 K011..... acrylonitrile, acetonitrile, hydrocyanic acid
 K013..... hydrocyanic acid, acrylonitrile, acetonitrile
 K014..... acetonitrile, acrylamide
 K015..... benzyl chloride, chlorobenzene, toluene, benzo-trichloride
 K016..... hexachlorobenzene, hexachlorobutadiene, carbon tetrachloride,
 hexachloroethane, perchloroethylene
 K017..... epichlorohydrin, chloroethers (bis-(chloromethyl) ether and bis(2-
 chloroethyl) ethers), trichloropropane, dichloropropanols
 K018..... 1,2-dichloroethane, trichloroethylene, hexachlorobutadiene, hexa-
 chlorobenzene
 K019..... ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroeth-
 ane, tetrachloroethanes (1,1,2,2-tetrachloroethane, and 1,1,1,2-
 tetrachloroethane), trichloroethylene, tetrachloroethylene,
 carbon tetrachloride, chloroform, vinyl chloride, vinylidene
 chloride
 K020..... ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroeth-
 ane, tetrachloroethanes (1,1,2,2-tetrachloroethane, and 1,1,1,2-
 tetrachloroethane), trichloroethylene, tetrachloroethylene,
 carbon tetrachloride, chloroform, vinyl chloride, vinylidene
 chloride
 K021..... antimony, carbon tetrachloride, chloroform
 K022..... phenol, tars (polycyclic aromatic hydrocarbons)
 K023..... phthalic anhydride, maleic anhydride
 K024..... phthalic anhydride, 1,4-naphthoquinone
 K093..... phthalic anhydride, maleic anhydride
 K094..... phthalic anhydride
 K025..... meta-dinitrobenzene, 2,4-dinitrotoluene
 K026..... paraldehyde, pyridines, 2-picoline
 K027..... toluene diisocyanate, toluene-2,4-diamine
 K028..... 1,1,1-trichloroethane, vinyl chloride
 K029..... 1,2-dichloroethane, 1,1,1-trichloroethane, vinyl chloride, vinyl-
 idene chloride, chloroform
 K095..... 1,1,2-trichloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetra-
 chloroethane
 K096..... 1,2-dichloroethane, 1,1,1-trichloroethane, 1,1,2-trichloroethane
 K030..... hexachlorobenzene, hexachlorobutadiene, hexachloroethane, 1,1,1,2-
 tetrachloroethane, 1,1,2,2-tetrachloroethane, ethylene dichlor-
 ide
 K031..... arsenic
 K032..... hexachlorocyclopentadiene
 K033..... hexachlorocyclopentadiene
 K034..... hexachlorocyclopentadiene
 K097..... chlordane, heptachlor
 K035..... cresote, chrysene, naphthalene, fluoranthene, benzo(b)fluoroan-
 thene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(a)anthra-
 cene, dibenzo(a)anthracene, acenaphthalene
 K036..... toluene, phosphorodithioic and phosphorothioic acid esters
 K037..... toluene, phosphorodithioic and phosphorothioic acid esters
 K038..... phorate, formaldehyde, phosphorodithioic and phosphorothioic acid
 esters
 K039..... phosphorodithioic and phosphorothioic acid esters

K040..... phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
 K041..... toxaphene
 K098..... toxaphene
 K042..... hexachlorobenzene, ortho-dichlorobenzene
 K043..... 2,4-dichlorophenol, 2,6-dichlorophenol, 2,4,6-trichlorophenol
 K099..... 2,4-dichlorophenol, 2,4,6-trichlorophenol
 K044..... N.A.
 K045..... N.A.
 K046..... lead
 K047..... N.A.
 K048..... hexavalent chromium, lead
 K049..... hexavalent chromium, lead
 K050..... hexavalent chromium
 K051..... hexavalent chromium, lead
 K052..... lead
 K060..... cyanide, naphthalene, phenolic compounds, arsenic
 K061..... hexavalent chromium, lead, cadmium
 K062..... hexavalent chromium, lead
 K069..... hexavalent chromium, lead, cadmium
 K100..... hexavalent chromium, lead, cadmium
 K071..... mercury
 K073..... chloroform, carbon tetrachloride, hexachloroethane, trichloroethane, tetrachloroethylene, dichloroethylene, 1,1,2,2-tetrachloroethane
 K074..... chromium
 K078..... chromium, lead
 K079..... lead, mercury, benzene, carbon tetrachloride, methylene chloride, tetrachloroethylene, naphthalene, di(2-ethylhexyl)phthalate, di-n-butylphthalate, toluene
 K081..... chromium, lead, mercury, nickel, methylene chloride, toluene
 K082..... antimony, cadmium, chromium, lead, nickel, silver, cyanides, phenol, mercury, pentachlorophenol, vinyl chloride, 3,3-dichlorobenzidene, naphthalene, di(2-ethylhexyl)-phthalate, di-n-butylphthalate, benzene, toluene, carbon tetrachloride, methylene chloride, trichloroethylene
 K083..... aniline, nitrobenzene, diphenylamine, phenylenediamine
 K084..... arsenic
 K085..... benzene, monochlorobenzene, dichlorobenzenes, trichlorobenzenes, tetrachlorobenzene, pentachlorobenzene, hexachlorobenzene, benzyl chloride
 K086..... chromium, lead
 K087..... phenol, naphthalene
 K101..... arsenic
 K102..... arsenic
 K103..... aniline, nitrobenzene, phenylenediamine
 K104..... aniline, benzene, diphenylamine, nitrobenzene, phenylenediamine
 K105..... benzene, monochlorobenzene, dichlorobenzenes, 2,4,6-trichlorophenol
 K106..... mercury

N.A.--Waste is hazardous because it fails the test for the characteristic of ignitability, corrosivity or reactivity.

Appendix 101.6: Testing Procedures for PCB-Contaminated Liquids

(1) The following procedures may be used to determine the concentration of PCBs in PCB-contaminated dielectric fluid:

(a) Dielectric fluid removed from mineral oil dielectric fluid electrical equipment may be collected in a common container, provided that no other substances 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 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 this paragraph, representative samples of mineral oil dielectric fluid are either samples taken in accordance with American Society of Testing and Materials method D923-81 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.

(2) The following procedures may be used 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 nonwaste oils, are added to the container.

(b) For purposes of complying with marking and disposal requirements, representative samples may be taken from either the common containers 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 this paragraph, representative samples of waste oil are either samples taken in accordance with American Society of Testing and Materials D923-81 method 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.

DIVISION 102
HAZARDOUS WASTE MANAGEMENT
Generators

Purpose

340-102-010 The purpose of this division is to establish waste management requirements for generators of hazardous waste.

Authority

340-102-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-102-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-102-040 The rules of this division apply to persons who, by virtue of ownership, management, or control, cause or allow to be caused the creation of a hazardous waste with the following exceptions:

(1) Generators of domestic-use waste, spent batteries, empty containers managed under rule 340-101-300, small quantities managed under rule 340-101-350, pesticide wastes managed under Division 125, or whose waste is subject to regulation under an NPDES or WPCF permit or Section 307(b) of the Clean Water Act are exempt from the rules of this division.

(2) Generators who produce or have in their possession less than 2 lbs. of any one or combination of wastes listed in rule 340-101-210(1)(a) or (b) or less than 2000 lbs. of any one or combination of other hazardous wastes in any calendar month need comply only with rules 340-102-050(2) and (3), -060, -100, -160(3)(b)(C) and (4), and -200, except -200(2).

NOTE: Persons subject to section (1) are not considered hazardous waste generators. Persons subject to the reduced requirements of section (2) are often referred to as "small" generators, while those subject to the full requirements of this division are referred to as "large" generators or simply generators.

Compliance

340-102-050 (1) Except for storage as authorized by rule 340-102-150, and the mixing of waste with sorbent materials in a container, generators who treat, store, or dispose of hazardous waste on their own plant site shall comply with the applicable requirements of Divisions 106 to 122.

(2) Compliance with these rules is in addition to compliance with other applicable local, state, and federal regulations.

(3) Generators shall permit authorized representatives of the Department access to the site of hazardous waste generation, treatment, storage, and disposal at reasonable times for the purpose of inspecting the site, the records of waste production and management, and for environmental monitoring.

Generator Registration

340-102-060 Generators shall promptly register with the Department on an approved form. The Department will assign an identification number to each generator which shall be used by the generator on all manifests, reports, and other correspondence with the Department.

NOTE: As a matter of policy, the Department will accept EPA identification numbers already assigned and use EPA's registration form and identification numbering system (Dun and Bradstreet) for generators who register in the future.

General Waste Management

340-102-100 (1) Generators shall manage hazardous waste in a manner that will minimize the possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fire, explosion, or the spilling of such waste.

(2) Generators shall not dilute a hazardous waste for the purpose of exempting it from regulation under these rules.

(3) Generators shall use best practicable means to reduce the amount of waste and to promote its beneficial use, recycle or treatment.

Waste Storage

340-102-150 Generators may store hazardous waste on-site in tanks or containers for up to 90 days without obtaining a license; however, the Department may grant a 30-day extension due to unforeseen, temporary and uncontrollable circumstances. A management facility license is required for all other modes of storage.

(1) Generators who store hazardous waste for off-site beneficial use or recycle need not manage the waste as hazardous provided:

(a) The total quantity of each individual waste does not exceed 2000 lb.;

(b) The generator complies with rule 340-101-050(1); and

(c) The activity or waste is not subject to regulation under rule 340-101-050(4).

(2) Generators may accumulate up to 2 lbs. of any one or combination of wastes listed in rule 340-101-230(a) or (b), or up to 55 gal. of any other hazardous waste in containers at the point of generation without complying with the rules of this division provided they:

(a) Accumulate the waste in containers of good condition that are made of or lined with materials which will not react, and are otherwise compatible with, the hazardous waste being accumulated;

(b) Mark the containers either with the words "Hazardous Waste" or to identify the contents of the containers; and

(c) Remove any waste in excess of 2 lbs. or 55 gal., as appropriate, within 72 hours of its accumulation, in a manner and to a place that complies with the rules of this division.

340-102-160 (1) Generators storing hazardous waste shall:

(a) Implement a personnel training program in accordance with rules 304-106-150 and -160;

(b) Implement the preparedness and prevention requirements of rules 340-106-300 to -350; and

(c) Prepare a contingency plan in accordance with rule 340-106-400.

(2) Generators storing hazardous waste in tanks shall comply with the requirements of Division 112.

(3) Generators storing hazardous waste in containers shall:

(a) Select such containers in accordance with 49 CFR Parts 173, 178 and 179 or as otherwise permitted by DOT;

(b) Mark or label such containers:

(A) In accordance with 49 CFR Part 172;

(B) With the date hazardous waste was first put into storage if the waste is stored in a non-licensed facility; and

(C) For PCB articles and containers: With the label M_L illustrated in Appendix 102.1. If the article is too small to accommodate the smallest permissible size of mark M_L , mark M_g may be substituted for mark M_L ;

NOTE: Marking of PCB-contaminated wastes, except for hydraulic machines, is not required.

(c) Manage such containers in accordance with rules 340-111-200 to -220; and

(d) After January 1, 1985: If storing in excess of 100 containers, provide a storage area that meets the requirements of rule 340-111-100.

(4)(a) Except as permitted by subsection (b) of this rule, generators shall segregate PCB waste from other wastes and store them in an area that complies with the requirements of rules 340-111-100 and -110.

(b) The following PCB waste may be stored temporarily in an area that does not comply with the requirements of rules 340-111-100 and -110 for up to 30 days from the date of their generation, provided that a notation is attached to the PCB article or container indicating the date the waste was generated:

(A) Non-leaking PCB and PCB-contaminated articles;

(B) Leaking PCB and PCB-contaminated articles if placed in a non-leaking container with sufficient sorbent materials to absorb any liquid remaining in the articles;

(C) PCB containers holding non-liquid PCBs such as contaminated soil, rags and debris; and

(D) PCB containers holding PCB-contaminated liquid, 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 the liquid in the drum does not exceed 500 ppm PCB.

Waste Shipment

340-102-200 (1) Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator shall:

(a) Package such waste in accordance with 49 CFR Parts 173, 178 and 179 or as otherwise permitted by DOT;

(b) Mark or label containers:

(A) In accordance with 49 CFR Part 172;

(B) If 110 gal. or less, with the following warning displayed in accordance with 49 CFR 172.304:

"HAZARDOUS WASTE--Federal Law Prohibits Improper Disposal.

If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

Generator's Name and Address _____

Manifest Number _____"; and

(C) For PCB and PCB-contaminated waste: With the label M_L illustrated in Appendix 102.1. If the article is too small to accommodate the smallest

permissible size of mark M_L, mark M_S may be substituted for mark M_L; and
NOTE: Marking of PCB-contaminated electrical equipment is not required.

(c) Placard or offer the initial transporter the appropriate placards in accordance with 49 CFR Part 172.

(2) Generators shall allow their waste to be transported only by a person that has obtained a hazardous waste identification number from the Public Utility Commissioner.

NOTE: As a matter of policy, the Commissioner will accept EPA identification numbers already assigned and use EPA's registration form and identification numbering system (Dun and Bradstreet) for transporters who register in the future.

(3) Generators shall ship hazardous waste only to a hazardous waste management facility or beneficial user lawfully operating under state or federal law.

(4) Generators that have reason to believe their hazardous waste is being managed in violation of these rules by either the transporter or by persons to whom the waste has been shipped (such as alteration of the manifest or failure of the transporter to take the waste to the designated facility), shall promptly notify the Department and take all necessary steps to correct such improper management.

(5) Generators shall not ship hazardous waste without having received prior written assurance of acceptance from the designated facility. In the event a waste shipment cannot be delivered to the designated facility, the generator shall accept return of the waste or make provision for its acceptance by an alternate lawfully operating facility.

NOTE: Generators exporting hazardous waste shall comply with rule 340-101-080(2).

Manifest System

EDITORIAL NOTE: Two section (1)s are provided with the following rule based upon the assumptions that EPA will or will not adopt a national manifest before these rules are adopted in February 1984. In the latter case, the Department will adopt the existing manifest format now and the national format when it is adopted by EPA.

340-102-250 (1) NATIONAL MANIFEST FORMAT. Generators shall not ship hazardous waste off-site without providing a properly completed manifest that complies with the form and instructions in Appendix 102.2.

(1) PRESENT MANIFEST FORMAT. Generators shall not ship hazardous waste off-site without providing a manifest that contains all of the following information:

(a) A manifest document number;

(b) The generator's name, mailing address, telephone number and EPA identification number;

(c) The name and EPA identification number of each transporter;

(d) The name, address and EPA identification number of the designated facility and an alternate facility, if any;

(e) The description of the waste(s) (e.g., proper shipping name, etc.) required by regulations of the U.S. Department of Transportation in 49 CFR 172.101, 172.202 and 172.203;

(f) The total quantity of each hazardous waste by units of weight or volume, and the type and number of containers as loaded into or onto the transport vehicle; and

(g) The certification: "This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the EPA."

(2) Generators shall prepare sufficient copies of the manifest so that all persons who handle the waste will be able to comply with the hazardous waste management rules.

NOTE: There will be at least four copies: generator, transporter, management facility, and the copy returned to the generator by the management facility. Additional transporter copies will be needed if the waste is to be carried by more than one transporter.

(3) At the time of waste transfer, a generator shall:

(a) Sign the manifest certification;

(b) Have the manifest signed and dated by the transporter; and

(c) Retain the bottom copy of the manifest and give the remaining copies to the waste transporter.

NOTE: It is intended that individual copies of the manifest be torn-off in inverse order so that the copies which carry the most information are the top or clearest copies.

(4) Generators may substitute shipping papers for the manifest for beneficially used hazardous waste whose shipment has been authorized by the Department pursuant to rule 340-102-400.

(5) Generators who do not receive a signed copy of the manifest or other confirmation of waste receipt from the designated hazardous waste management facility or beneficial user within 35 days of shipment shall contact the transporter and/or facility operator to determine the status of the waste.

(6) Generators who still do not receive a signed copy of the manifest or other confirmation of waste receipt within 10 days after having taken action as required by section (5) of this rule shall promptly submit to the Department:

(a) A duplicate of the generator's copy of the manifest or shipping papers; and

(b) An explanation of the efforts to locate the waste and the results of those efforts.

340-102-260 Generators shall submit copies of the latest quarter's manifests and shipping papers to the Department within 45 days after the end of each calendar quarter. Alternatively, generators may copy the information from the manifests and shipping papers onto a form of their choice and submit it within the same time schedule.

NOTE: For ease of processing, the Department prefers xerographic or carbon copies of the manifests and shipping papers.

Operating Record

340-102-300 (1) Generators shall retain for three years from the date of waste shipment:

(a) The signed manifests and other confirmation of waste receipt returned to the generator by the hazardous waste management facility or beneficial user. The generator's copy shall be retained until the facility or user's copy is received or in lieu of the latter if it is not received; and

(b) Copies of correspondence with the Department, waste analyses, and other information pertaining to the waste shipment.

(2) The three-year records retention period shall be automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as may be requested by the Department.

340-102-310 The Department may require a generator to furnish operating data concerning the production, storage and disposition of his hazardous waste.

Beneficial Use

340-102-400 Generators proposing to ship waste to a beneficial user shall obtain written authorization from the Department prior to initiating such shipments. To request authorization, a generator shall submit to the Department, at least 30 days prior to the initial shipment, the following information:

- (1) Name and address of facility at which waste is to be used;
- (2) Type and quantity of waste;
- (3) Why the waste is identified as hazardous;
- (4) Management of waste at the facility prior to use;
- (5) Use of waste;
- (6) Rate or time of that use;
- (7) A statement from the beneficial user, agreeing to permit authorized representatives of the Department access to the site of waste management and use for the purpose of inspecting the site, the records of waste management and use, and environmental monitoring; and
- (8) Other information as may be requested by the Department.

NOTE: Generators that presently ship waste to beneficial users shall submit the required information by July 1, 1984.

Appendix 102.1: PCB Marking Formats

The following formats shall be used for marking PCB articles and containers:

(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 sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB article or container. The size of the mark shall be at least 6 inches on each side. If the PCB article 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 sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB article or container. The mark shall be rectangular 1 inch by 2 inches. If the PCB article 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.

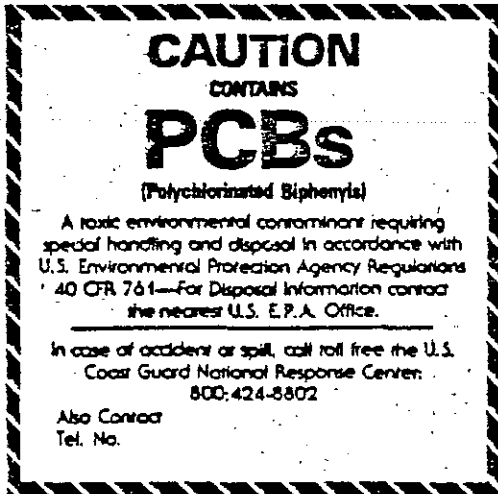


Figure 1

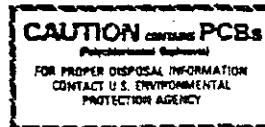


Figure 2

UNIFORM HAZARDOUS WASTE MANIFEST						GSA NO. XXX FORM APPROVED OMB NO. XXX		
(Please print or type with ELITE type (12 characters per inch).)								
GENERATOR NAME AND MAILING ADDRESS				MANIFEST DOCUMENT NUMBER				
				EPA I.D. NUMBER				
AREA CODE/PHONE NUMBER								
TRANSPORTER #1				EPA I.D. NUMBER				
TRANSPORTER #2				EPA I.D. NUMBER				
TREATMENT, STORAGE, OR DISPOSAL (TSD) FACILITY				EPA I.D. NUMBER				
AREA CODE/PHONE NUMBER								
PROPER U.S. D.O.T. SHIPPING NAME AND HAZARD CLASS.		UN/NA NUMBER	TOTAL QUANTITY	UNIT WT/VOL	CONTAINER NO	TYPE	WASTE NO. (OPTIONAL)	
DRAFT								
SPECIAL HANDLING INSTRUCTIONS . . .								
This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the EPA.								
PRINTED OR TYPED FULL NAME AND SIGNATURE						MO	DAY	YR
<input type="checkbox"/> CHECK IF CONTINUATION SHEET IS USED. NUMBER OF CONTINUATION SHEETS _____								
TO BE FILLED IN BY TRANSPORTER	TRANSPORTER 1 ACKNOWLEDGEMENT OF RECEIPT OF ABOVE MATERIALS					DATE REC'D & ACCEPTED		
	PRINTED OR TYPED FULL NAME AND SIGNATURE					MO	DAY	YR
TO BE FILLED IN BY TSDF	TRANSPORTER 2 ACKNOWLEDGEMENT OF RECEIPT OF ABOVE MATERIALS					DATE REC'D & ACCEPTED		
	PRINTED OR TYPED FULL NAME AND SIGNATURE					MO	DAY	YR
DISCREPANCY INDICATION SPACE								
Facility owner or operator: Certification of receipt of hazardous material covered by this manifest except as noted in the discrepancy indication space above						DATE REC'D & ACCEPTED		
PRINTED OR TYPED FULL NAME AND SIGNATURE						MO	DAY	YR

EPA FORM 8700-22 (8-81)
BILLING CODE 6550-30-C

for Generators (EPA Form 8700-

Name and Mailing Address

Enter your company's name and mailing address. Enter a telephone number where a responsible person may be reached who can furnish information in response to an inquiry.

Manifest Document Number

DOT Number

Enter your EPA ID number in the 12 spaces to the left of the vertical line. In the space to the right of this line, enter a five-digit sequentially increasing number of your choice.

Transporter #1

Enter the name and EPA ID Number of the transporter company you will use to be the first transporter.

Transporter #2

If there is a second transporter enter the name and EPA ID Number of the company. Space for additional transporters is provided on the Continuation Sheet (EPA form 8700-22A).

Treatment, Storage or Disposal Facility

Enter the name, address, telephone number and EPA ID Number of the treatment, storage or disposal facility to which you are sending the waste.

Proper U.S. DOT Shipping Name and Hazard Class

Enter the proper DOT shipping name for the material. The U.S. DOT (Department of Transportation) regulations will help in completing this part. You can find these regulations in Title 49 of the Code of Federal Regulations (49 CFR Part 172).

UN/NA Number

Enter the UN (United Nations) or NA (North American) number for each waste

according to Title 49 CFR Part 172.101.

Total Quantity and Unit

Enter the amount of each waste you are shipping, and the appropriate abbreviation from Table I below for either the weight or the volume of each waste you are shipping.

Table I

- G = gallon
- P = pound
- T = ton
- Y = cubic yard
- L = liter
- K = kilogram
- N = metric ton
- M = cubic meter

Container Number and Type

Enter the number of containers for each entry, and the appropriate abbreviation for the type of each container you are using from Table II below.

Table II

- DM = Metal drums, barrels, kegs.
- DW = Wooden drums, barrels, kegs.
- DF = Fiberboard or plastic drums, barrels, kegs.
- PT = Portable tanks.
- CT = Cargo tanks (tank cars).
- TC = Tank car.
- CY = Cylinders.
- CM = Metal boxes, cartons, cases.
- CW = Wooden boxes, cartons, cases.
- CF = Fiber or plastic boxes, cartons, cases.
- BA = Bags made of burlap, cloth, paper, or plastic.

Waste No. (Optional)

For your own record keeping purposes, you may enter the Federal or State Hazardous Waste Number for each waste you are shipping. Additional space for Proper U.S. DOT Shipping Descriptions are available on the Continuation Sheet (EPA Form 8700-22A).

Special Handling Instructions

Enter any special handling instructions here. You may use this space to enter the

name, address and telephone number of any alternate treatment, storage or disposal facility.

Certification Statement

Sign and type or print your full name. Enter the date you ship the waste (in the boxes to the right). If continuation sheets are required, indicate this by placing an "X" in the box. Then indicate the number of additional continuation sheets in the space provided.

Instructions for Transporters: (EPA Form 8700-22)

Transporter 1 Certification Statement

Sign and print or type your full name acknowledging that you received the materials described by the generator on the manifest. Enter the date of receipt in the boxes to the right.

Transporter 2 Certification Statement

Sign and print or type your full name acknowledging that you received the materials described on the manifest. Enter the date of receipt in the boxes to the right.

[Note.--Additional transporters are required to sign on the Continuation Sheet, (EPA Form 8700-22A). See Instructions for Continuation Sheet.]

Instructions for Owners or Operators of Treatment, Storage or Disposal Facilities: (EPA Form 8700-22)

Discrepancy Indication Space

Refer to 40 CFR 264.72 and 265.72 for help in completing this part. In this space you must note any significant discrepancy between the waste described on the manifest and the waste you actually received. If you cannot resolve significant discrepancy within 15 days of receiving the waste you must submit a letter to your EPA Regional Administrator describing the discrepancy and your attempts to reconcile it. A copy of the manifest at issue must be enclosed with the letter.

Certification Statement

Sign and type or print your full name next to your signature. Enter the date you accept the waste in the boxes to the right.

BILLING CODE 6560-30-M

UNIFORM HAZARDOUS WASTE MANIFEST		GSA NO. XXX FORM APPROVED OMB NO. XXX			
Please print or type with ELITE type (12 characters per inch).					
CONTINUATION SHEET		MANIFEST DOCUMENT NUMBER EPA I.D. NUMBER			
THIS IS CONTINUATION SHEET ____ OF ____					
TRANSPORTER #		EPA I.D. NUMBER			
TRANSPORTER #		EPA I.D. NUMBER			
PROPER U.S. D.O.T. SHIPPING NAME AND HAZARD CLASS	UN/NA NUMBER	TOTAL QUANTITY	UNIT WT/VOL	CONTAINER NO.	WASTE NO. (OPTIONAL)
DRAFT					
TRANSPORTER ACKNOWLEDGEMENT OF RECEIPT OF ABOVE MATERIALS			DATE REC'D & ACCEPTED		
PRINTED OR TYPED FULL NAME AND SIGNATURE			MO DAY YR		
TRANSPORTER ACKNOWLEDGEMENT OF RECEIPT OF ABOVE MATERIALS			DATE REC'D & ACCEPTED		
PRINTED OR TYPED FULL NAME AND SIGNATURE			MO DAY YR		

TO BE FILLED IN BY THE GENERATOR

TO BE FILLED IN BY TRANSPORTER

EPA FORM 8700-22A (3-81)
BILLING CODE 6550-30-C

Instructions for Continuation Sheet (EPA Form 8700-22A)

Instructions for Generator (EPA Form 8700-22A)

This is Continuation Sheet of

Fill-in the spaces with the appropriate numbers.

Manifest Document Number

EPA ID Number

Enter the same number here that appears on the first page of the manifest (EPA Form 8700-22).

Transporter _____

If you require more than two transporters to complete the shipment of the hazardous waste described on this manifest, enter the name and EPA I.D. Number of each in the order in which they will transport the waste. Be sure to indicate in the space following the word "Transporter" their order of carriage of the waste. (e.g. 3rd 4th etc.)

Proper U.S. DOT Shipping Name and Hazard Class

If you require additional space to list the hazardous wastes described by this manifest, enter the appropriate information here. [See Instructions for Generators (EPA Form 8700-22).]

Instructions for Transporters (EPA Form 8700-22A)

Sign and print or type your full name in the appropriate space. For example, if you are the third transporter, put a "3" in the space following the word "transporter". With your signature you acknowledge that you received the materials described by the generator on the manifest. Enter the date of receipt in the boxes to the right.

DIVISION 103
HAZARDOUS WASTE MANAGEMENT
Air/Water Transporters

Purpose

340-103-010 The purpose of this division is to establish rules for transporting hazardous waste by air or water.

Authority

340-103-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-103-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-103-040 The rules of this division apply to persons who transport hazardous waste by air or water if the shipment is accompanied by a manifest or shipping papers pursuant to rule 340-102-250 (all "large" generators).

Compliance

340-103-050 (1) Compliance with these rules is in addition to compliance with other applicable local, state, and federal regulations.

(2) Transporters shall permit authorized representatives of the Department access to the site of hazardous waste handling and storage at reasonable times for the purpose of inspecting the site, equipment, records of waste storage and transportation, and for environmental monitoring.

Transporter Registration

340-103-060 Transporters shall promptly register with the Department on an approved form. The Department will assign an identification number to each transporter which shall be used by the transporter on all manifests, reports, and other correspondence with the Department.

NOTE: As a matter of policy, the Department will accept EPA identification numbers already assigned and use EPA's registration form and identification numbering system (Dun and Bradstreet) for transporters who register in the future.

General Waste Management

340-103-050 (1) Transporters shall manage hazardous waste in a manner that will minimize the possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fire, explosion, or the spilling of such waste.

(2) Transporters shall not mix hazardous wastes by placing them into a single container without the consent of the waste generator(s).

(3) In the event a transporter mixes hazardous wastes, the Department, at its discretion, may allow the transporter to comply with the rules for generators, Division 102, or require him to comply with the requirements for a hazardous waste treatment facility, Divisions 106-120.

(4) Transporters who store manifested shipments of hazardous waste in containers meeting the requirements of 49 CFR Parts 173, 178 and 179 or as otherwise permitted by DOT at a transfer facility for up to 10 days are exempt from Divisions 106 to 120.

Waste Shipment

340-103-200 (1) Transporters shall deliver hazardous waste only to the facility designated by the generator on the manifest or shipping papers.

(2) If hazardous waste cannot be delivered in accordance with the generator's instructions, the transporter shall contact the generator for further instructions and revise the manifest or shipping papers accordingly.

NOTE: Transporters importing hazardous waste shall comply with rule 340-101-080(1).

Manifest System

340-103-250 (1) Transporters shall not accept hazardous waste from a generator or a prior transporter unless it is accompanied by a manifest properly completed (Appendix 102.2) and signed by the generator and the prior transporter(s), if applicable.

NOTE: Rule 340-102-250(4) permits a generator to substitute shipping papers for the manifest for beneficially used hazardous waste whose shipment has been authorized by the Department. Such papers shall accompany the waste in the same manner as would the manifest.

(2) Before transporting hazardous waste, the transporter shall sign and date the manifest indicating acceptance of the hazardous waste from the generator or the prior transporter and give him the bottom copy.

NOTE: It is intended that individual copies of the manifest be torn-off in inverse order so that the copies which carry the most information are the top or clearest copies. The transporter should then have three copies of the manifest: transporter, management facility and the copy returned to the generator by the management facility. Additional transporter copies will be needed if the waste is to be carried by more than one transporter.

(3) The transporter shall ensure that the manifest accompanies the hazardous waste.

(4) When delivering hazardous waste to the transporter or facility designated on the manifest, the transporter shall obtain the date of delivery and the signature of the waste recipient. The transporter shall retain the bottom copy of the manifest and transfer the remaining copies with the waste.

(5) A water transporter may substitute shipping papers for the manifest if the papers contain all the information required by the manifest (excluding the generator's certification and signature) provided he:

(a) Delivers the hazardous waste to the transporter or facility designated on the manifest;

(b) Ensures that the shipping papers accompany the hazardous waste;

(c) Obtains the date of delivery and signature of the waste recipient

on the shipping papers;

(d) Retains a copy of the shipping papers; and

(e) Ensures that the manifest containing his signature and the date he accepted the waste is forwarded to the waste recipient so that it may again accompany the waste.

(6) Transporters who transport hazardous waste out of the United States shall:

(a) Sign the manifest and indicate the date the waste left the United States; and

(b) Retain one copy of the manifest and forward one copy to the generator.

Operating Record

340-103-300 (1) Transporters shall retain for three years from the date of waste acceptance copies of all manifests, shipping papers, correspondence with the Department, and other information pertaining to the waste shipment.

(2) The three-year record retention period shall be automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as may be requested by the Department.

DIVISION 104: Reserved

DIVISION 105: Reserved

DIVISION 106
HAZARDOUS WASTE MANAGEMENT
Management Facilities: General Operating Standards

Purpose

340-106-010 The purpose of this division is to establish general operating requirements for all hazardous waste management facilities. Specific facility requirements may be found in Divisions 107 to 117.

Authority

340-106-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-106-030 The definitions used in this division may be found in rule 340-100-030.

Applicability

340-106-040 Divisions 106 to 120 apply to any person treating, storing or disposing of hazardous waste with the following exceptions:

(1) Persons who treat, store or dispose of hazardous waste produced by non-generators (those exempt under rule 340-102-040(1));

(2) Persons who treat, store or dispose of hazardous waste produced by small generators (those subject to the reduced requirements of rule 340-102-040(2)) provided that such persons, excluding generators who treat or store on-site, obtain a letter of authorization pursuant to rule 340-120-500(2) if the amount treated, stored or disposed is greater than 200 lb/mo. of any one or combination of hazardous wastes;

(3) Persons carrying out activities to manage a spill of a hazardous waste or hazardous substance pursuant to Division 124 or who are authorized to act in the public interest pursuant to rule 340-120-500(1);

(4) The license-by-rule facilities listed in Division 122 to the extent that such facilities comply with the requirements of that division;

(5) Generators who store hazardous waste on-site for less than 90 days in compliance with rules 340-102-150 and -160;

(6) Generators owning or operating a totally enclosed treatment facility;

(7) Generators who add absorbent material to waste in a container, if done at the time waste is placed in the container, provided they comply with rule 340-111-210;

(8) Transporters who store manifested shipments of hazardous waste in containers meeting the requirements of rule 340-102-200(1) at a transfer facility for a period not to exceed 10 days; and

(9) Persons permitted to dispose of a specified hazardous waste in a specified solid waste disposal site pursuant to rule 340-120-550.

Compliance

340-106-050 (1) Compliance with these rules or the terms of a license is in addition to compliance with other applicable local, state and federal

regulations.

(2) Owners and operators shall permit authorized representatives of the Department access to the hazardous waste management facility at reasonable times for the purposes of inspecting the facility, the records of waste management, and for environmental monitoring.

License Required

340-106-060 (1) No person shall establish, construct or operate a hazardous waste management facility without first:

(a) Registering with the Department on an approved form; and

(b) Obtaining a license pursuant to Division 120.

(2) The Department will issue an identification number to each facility which shall be used by the owner or operator on all manifests, reports and other correspondence with the Department.

Facility Location

340-106-070 No person shall establish, construct or operate a hazardous waste management facility in a 100-year floodplain unless:

(1) The facility is designed, constructed, operated and maintained to prevent washout of any hazardous waste; or

(2) A contingency plan is in effect to remove the waste safely, before flood waters can reach the facility, to a hazardous waste management facility where the wastes will not be vulnerable to flood waters; or

(3) For existing surface impoundments, waste piles, land treatment facilities and landfills: No adverse effects on human health or the environment will result if washout occurs, considering:

(a) The volume and physical and chemical characteristics of the waste in the facility;

(b) The concentration of hazardous constituents that would potentially affect surface waters;

(c) The impact of such hazardous constituents on the current or potential uses of and water quality standards established for the affected surface waters; and

(d) The impact of hazardous constituents on the sediments of affected surface waters and the soils of the 100-year floodplain.

340-106-080 No person shall establish, construct or operate a hazardous waste management facility within 200 feet of a fault which has had displacement in Holocene time.

Waste Analysis

340-106-100 An owner or operator shall develop and follow a written waste analysis plan for obtaining a detailed chemical and physical analysis of all hazardous wastes prior to their being treated, stored or disposed at the facility. The plan, which is to be kept at the facility, must specify:

(1) The constituents for which each hazardous waste will be analyzed and the rationale for the selection of those constituents. This may be based on data developed pursuant to the determination of rule 340-101-040(2), existing published or documented data on the hazardous waste, or on hazardous waste generated from similar processes;

(2) The test methods to be used to test for these constituents;

(3) The sampling method to be used to obtain a representative sample

of the waste to be analyzed. A representative sample may be obtained using an appropriate sampling method described in Appendix 101.1 or an equivalent method;

(4) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up-to-date. At a minimum, this must be done:

(a) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed; and

(b) For off-site facilities: When the results of the inspection required by subsection (6)(b) of this rule suggest that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

(5) The methods to be used to analyze wastes requiring specific management methods such as ignitable, reactive or incompatible wastes or incinerable wastes requiring analysis pursuant to rules 340-117-210 and -250(1); and

(6) For off-site facilities:

(a) The waste analyses that hazardous waste generators have agreed to supply;

(b) The procedures to be used to inspect and, if necessary, analyze any hazardous waste received at the facility to ensure that it is the waste identified on the accompanying manifest or shipping paper; and

(c) The procedures to be used to determine the identity of each movement of waste managed at the facility.

NOTE: An owner or operator of an off-site facility may arrange for the generator of the hazardous waste to supply part or all of the waste analysis. If the generator does not supply the analysis, the owner or operator is responsible for obtaining the information required to comply with this rule.

Personnel Training

340-106-150 Within six months after the date of their employment or assignment to a facility, or to a new position at a facility, all personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with these rules. This program must:

(1) Include all the elements of the training outlined pursuant to rule 340-106-160(1)(c);

(2) Be directed by a person trained in hazardous waste management procedures, and include instruction which teaches facility personnel those procedures relevant to the positions in which they are employed;

(3) Be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, equipment, and systems, including:

(a) Procedures for using, inspecting, repairing and replacing facility emergency and monitoring equipment;

(b) Key controls for automatic waste feed cut-off systems;

(c) Communication and alarm systems;

(d) Response to fire and explosions;

(e) Response to groundwater contamination incidents; and

(f) Shutdown of operations;

(4) Prohibit employees from working in unsupervised positions until they have completed their training requirements; and

(5) Provide for an annual review.

340-106-160 (1) An owner or operator shall maintain the following employment records at the facility:

(a) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling the position;

(b) A written job description for each of these positions, consistent in degree of specificity with descriptions for other similar positions in the same company location and include the requisite skill, education, other qualifications and duties of the employee assigned to the position;

(c) A written description of the type and amount of both introductory and continuing training that will be given to each person filling one of these positions; and

(d) Records documenting that the required training or job experience has actually been completed by facility personnel.

(2) Training records on current personnel must be kept until closure of the facility; training records on former employees must be kept for at least three years after the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

Security

340-106-200 An owner or operator shall prevent unknowing entry, and minimize the possibility for unauthorized entry, of persons or livestock onto the active portion of the site. This can be accomplished by:

(1) An access control system consisting of:

(a) A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry; or

(b) An artificial or natural barrier which completely surrounds the active portion of the facility and a means to control entry at the access points; and

(2) The posting of signs with the legend "Danger--Unauthorized Personnel Keep Out," or the equivalent, at each entrance to the active portion of a site, and at other locations, in sufficient numbers to be seen from any approach to the active portion. The legend shall be legible from a distance of 25 feet.

Inspection

340-106-250 (1) An owner or operator shall inspect his facility for malfunctions and deterioration, operator errors, and discharges often enough to identify problems in time to correct them before they harm human health or the environment.

(2) An owner or operator shall develop and follow a written schedule for inspecting the facility, including the monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment often enough to comply with section (1) of this rule.

(a) The schedule must be kept at the facility.

(b) The schedule must identify the types of problems which are to be looked for during the inspection.

(c) The frequency of inspection may vary for the items on the schedule; however, it should be based on the presumed rate of deterioration

of the equipment and the probability of an incident if any deterioration, malfunction or operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading docks, must be inspected daily when in use. At a minimum, the inspection schedule must adhere to the terms and frequencies required by the rules for a specific facility.

(d) Records of the inspection shall be kept in an inspection log. At a minimum, the records must include the date and time of the inspection, the name of the inspector, a summary of his observations, and the date and nature of repairs or other remedial actions, if any.

340-106-260 An owner or operator shall remedy any observed deterioration or malfunction of equipment or structures on a schedule which ensures that the situation will not appreciably deteriorate. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

Preparedness and Prevention

340-106-300 An owner or operator shall design, construct, maintain and operate a facility to minimize the possibility of a fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water which could threaten human health or the environment.

340-106-310 (1) A facility must be equipped with the following emergency equipment, unless it can be demonstrated that the hazards posed by waste handled at the facility do not require a particular item of equipment:

(a) An internal communication or alarm system capable of providing immediate emergency instructions to facility personnel;

(b) A device, such as a telephone or a hand-held two-way radio, capable of summoning emergency assistance from local police or fire departments, or State or local emergency response teams;

(c) Portable fire extinguishers and other fire control equipment, spill control equipment and decontamination equipment; and

(d) Water at an adequate volume and pressure to supply water hoses, foam producing equipment, automatic sprinklers, water spray systems and other emergency equipment.

(2) All facility emergency equipment must be tested and maintained to assure its proper operation in time of need.

340-106-320 (1) Whenever hazardous waste is being poured, mixed, spread or otherwise handled, all personnel involved in the operation must have immediate access to the internal communication or alarm system, either directly or through visual or voice contact with another employee, unless such a device is not required under rule 340-106-310(1)(a).

(2) If there is only a single employee on the site while the facility is operating, he must have immediate access to the device, such as a telephone or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required under rule 340-106-310(1)(b).

340-106-330 An owner or operator shall maintain sufficient aisle space to permit the unobstructed movement of personnel and emergency equipment to any part of a facility.

340-106-340 (1) An owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. Such waste must be separated and protected from sources of ignition or reaction including but not limited to open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks, spontaneous ignition and radiant heat. When ignitable or reactive waste is being handled, "No Smoking" signs must be conspicuously posted and smoking and open flames confined to specially designated locations.

(2) An owner or operator of a facility that intentionally mixes incompatible wastes or incompatible wastes and other materials, shall take precautions to prevent reactions which:

(a) Generate extreme heat or pressure, fire or explosions, or violent reactions;

(b) Produce uncontrolled toxic mists, fumes, dusts or gases in dangerous quantities;

(c) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion;

(d) Damage the structural integrity of the reaction vessel; or

(e) Through other like means threaten human health or the environment.

340-106-350 (1) An owner or operator shall make every effort to obtain agreement on the following arrangements, as appropriate for the type of waste handled at the facility and the potential need for the services of those response personnel:

(a) Arrangements to familiarize police and fire departments and emergency response teams with the layout of the facility, properties of the hazardous wastes handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility and possible evacuation routes;

(b) Where more than one police or fire department might respond to an emergency, agreements designating primary authority to a specific police or fire department, and agreements with any others to provide support to the primary responding authority;

(c) Agreements with State emergency response teams, emergency response contractors and equipment suppliers; and

(d) Arrangements to familiarize local hospitals with the properties of the hazardous wastes handled at the facility and the types of injuries or illnesses which could result from fires, explosions or releases at the facility.

(2) Where State or local authorities decline to enter into such arrangements, the owner or operator shall document the refusal in the operating record.

Contingency Plan

340-106-400 An owner or operator shall develop and follow a contingency plan for the facility. The contingency plan must be designed to minimize the hazard to human health and the environment from fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water. The plan shall be updated as necessary.

(1) The provisions of the plan must be carried out immediately whenever there is a fire, explosion or release of hazardous waste or

hazardous waste constituents which could threaten human health or the environment.

(2) If an owner or operator has already prepared a Spill Prevention, Control, and Countermeasure (SPCC) Plan in accordance with 40 CFR Part 112, or has some other emergency or contingency plan, he need only revise the existing plan to incorporate the hazardous waste management provisions needed to comply with the requirements of this rule.

(3) The contingency plan must include:

(a) A description of the action facility personnel will take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water. This description must incorporate rules 340-106-450 to -470, as applicable;

(b) A description of the arrangements agreed upon by local police and fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to rule 340-106-350;

(c) A list of the names, addresses and 24-hour phone numbers of all persons qualified to act as emergency coordinator. The emergency coordinator must be either at the facility or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. He must be thoroughly familiar with all aspects of the contingency plan, all operations and activities at the facility, the location and characteristics of the waste handled, the location of all records within the facility, and the facility layout. In addition, they must have the authority to commit the resources needed to carry out the contingency plan. When more than one person is listed, one person must be designated primary emergency coordinator and the others listed in the order in which they will assume responsibility as alternates;

(d) A list of all emergency equipment at the facility, its physical description and location, and a brief outline of its capabilities; and

(e) An evacuation plan for facility personnel where there is a possibility that evacuation might be necessary. This must describe signals to be used to begin evacuation, evacuation routes and alternate evacuation routes to be used when the primary routes are blocked by releases of hazardous waste, fires, or the threat of explosion.

(4) A copy of the contingency plan and all revisions to the plan must be maintained at the facility and copies of the appropriate portions of the plan maintained at the station of all response personnel that have been identified as agreeing to provide emergency services.

(5) The contingency plan must be reviewed, and, if necessary, amended, whenever:

(a) The facility license is revised;

(b) The plan fails in an emergency;

(c) The facility changes, in design, construction, maintenance, operation, or other aspect, in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

(d) The emergency coordinators change; or

(e) The emergency equipment changes.

Emergency Procedures

340-106-450 (1) In the event of an imminent or actual emergency, the emergency coordinator shall immediately:

- (a) Activate the internal communication or alarm system to notify all facility personnel;
- (b) Activate the contingency plan;
- (c) Notify appropriate response personnel if their help is needed; and
- (d) Identify the character, exact source, amount and areal extent of any actual or impending release. This may be done by observation or review of facility records, manifests, or, if necessary, by chemical analysis.

(2) As soon thereafter as possible, the emergency coordinator shall:

- (a) Notify the Oregon Accident Response System (OARS), telephone 1-800-452-0311, with the following information:
 - (A) Name and telephone number of the reporter;
 - (B) Name and address of facility;
 - (C) Time and type of incident (e.g., release, fire);
 - (D) Name and quantity of substances involved, to the extent known;
 - (E) The extent of injuries; and
 - (F) The possible effects outside the facility.
- (b) Assess possible hazards to human health and the environment that may result from the release, fire or explosion. This assessment must consider both direct and indirect effects (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, the effects of any hazardous surface runoff from water or chemical agents used to control fire or explosions). If the assessment indicates that evacuation of local areas may be advisable, appropriate local authorities shall be immediately notified.

(3) The emergency coordinator shall take all reasonable measures to ensure that fires, explosions and releases do not occur, recur or spread to other areas of the facility or outside the facility. These measures must include, when necessary, ceasing operation, collecting and containing released waste, and removing or isolating containers.

340-106-460 When the emergency conditions have subsided, the emergency coordinator shall:

- (1) Monitor for leaks, pressure buildup, gas generation, or ruptured valves, pipes, or other equipment, as appropriate;
- (2) Provide for cleanup and the treating, storing, or disposing of recovered waste, contaminated soil or surface water, and any other material that results from the release, fire or explosion;
- (3) Note in the operating record the time, date and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, submit to the Department a written report of the incident including:
 - (a) Name, address and telephone number of the owner or operator;
 - (b) EPA identification number, name, address and telephone number of the facility;
 - (c) Date, time and type of incident (e.g., release, fire);
 - (d) Name and quantity of substances involved;
 - (e) The extent of injuries;
 - (f) An assessment of actual or potential hazards to human health and the environment;
 - (g) Estimated quantity and disposition of recovered substances that resulted from the incident; and

(h) The steps taken to prevent a recurrence of the incident.

340-106-470 An owner or operator of an affected facility shall not restart normal operation until:

(1) Cleanup of the affected areas are completed sufficient to mitigate any remaining hazard;

(2) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use; and

(3) The owner or operator obtains permission from the Department to resume operation.

NOTE: Verbal permission will be followed by written permission within 7 days.

Manifest System

340-106-500 (1) An owner or operator shall not accept a shipment of hazardous waste:

(a) From any generator who has shipped more than 2 lb. of any one or combination of wastes listed in rule 340-101-230(a) or (b) or more than 2000 lb. of any one or combination of other hazardous wastes in any calendar month unless accompanied by a manifest;

(b) Unless his facility is designated as the management facility on the manifest; and

(c) If there are no significant discrepancies in type between the manifest and the waste shipment (as defined by rule 340-106-520(2)).

(2) In the event a waste shipment is received that does not comply with the requirements of section (1) of this rule, the owner or operator may request Department approval to accept it. This may be done by contacting the Department and furnishing the information required below. If approval is granted, the information must be included in the next periodic operating report (see rule 340-106-600):

(a) The EPA identification number, name, address and phone number of the facility;

(b) The EPA identification number, name, address and phone number of the generator;

(c) The EPA identification number, name, address and phone number of each transporter;

(d) The date of waste receipt;

(e) A description and the quantity of the hazardous waste shipment;

(f) The method of treatment, storage or disposal for the waste; and

(g) An explanation of the problem and reason for its occurrence.

NOTE: Rail and water transporters may substitute shipping papers for the manifest.

(3) Owners and operators of collection sites which consolidate small quantities of waste that did not require a manifest shall comply with the appropriate portions of Division 102, for subsequent shipment of such waste.

340-106-510 (1) Upon acceptance of hazardous waste accompanied by a manifest, an owner or operator (or his designee) of a hazardous waste management facility shall:

(a) Note any significant manifest discrepancies (as defined by rule 340-106-520) on the manifest;

(b) Sign and date the manifest to certify that the hazardous waste covered by the manifest was received; and

(c) Give the transporter a copy of the signed manifest.

(2) Within 30 days after the delivery, an owner or operator shall return a copy of the manifest to the generator.

NOTE: Rail and water transporters are required to forward a manifest to the management facility. A copy of the shipping papers should be returned to the generator if the manifest has not been received.

(3) An owner or operator shall retain a copy of each manifest (and shipping paper) for at least three years from the date of waste receipt.

340-106-520 An owner or operator shall attempt to resolve significant discrepancies between the manifest and the waste shipment with the waste generator and the transporter. If the discrepancy is not resolved within 15 days after receipt of the waste, the owner or operator shall immediately forward a written report to the Department describing the discrepancy and attempts to reconcile it, and a copy of the manifest (or shipping paper) at issue.

(1) A significant discrepancy in quantity is any variation in weight greater than 10% or any variation in piece count (such as one drum unaccounted for).

(2) A significant discrepancy in type is an obvious difference which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or significant concentrations of unreported hazardous constituents in the waste.

Operating Record

340-106-550 An owner or operator shall keep the following written operating records at the facility; those required by sections (1) and (2) of this rule until closure of the facility and the remainder for three years:

(1) A description and quantity of each hazardous waste received, and the method(s) and date(s) of treatment, storage or disposal;

(2) The location of each hazardous waste within the facility and the quantity at each location. This information must include cross-references to specific manifest numbers, if the waste was accompanied by a manifest. For a landfill:

(a) Its location and dimensions, including depth, with respect to permanently surveyed benchmarks; and

(b) The type, quantity and location of each waste within the landfill.

(3) Records and results of waste analyses performed pursuant to rule 340-106-100;

(4) Summary reports and details of all incidents that require implementation of the contingency plan;

(5) Records and results of inspections conducted pursuant to rule 340-106-250;

(6) Monitoring, testing or analytical data where required by Division 107 or the rules for a specific facility; and

(7) All closure cost, and, for disposal facilities, post-closure cost estimates made pursuant to Division 108.

340-106-560 (1) An owner or operator shall furnish to the Department, upon request, all information, records and plans required by these rules.

(2) The retention period for all records required by rule 340-106-550 is extended automatically during the course of any unresolved enforcement action regarding the facility or as otherwise may be requested by the

Department.

(3) For landfills: A copy of the waste disposal records required by rule 340-106-550(2) shall be submitted to the Department upon closure of the facility.

Reporting

340-106-600 (1) An operating report shall be submitted to the Department indicating all hazardous wastes treated, stored, or disposed. Hazardous waste treatment and collection site reports are due within 45 days after the end of each calendar quarter. Hazardous waste disposal site reports are due monthly within 45 days after the end of each calendar month. The report shall include the following information as taken from the manifest or other appropriate source:

- (a) Period covered by the report;
- (b) EPA identification number, name, address and phone number of the facility; and
- (c) For all wastes received during the reporting period:
 - (A) Date of waste acceptance;
 - (B) Manifest number;
 - (C) Waste description, quantity, number and type of containers, physical state, and classification;
 - (D) EPA identification number, name, address and phone number of the waste generator;
 - (E) EPA identification number, name, address and phone number of each transporter;
 - (F) Details of the treatment, storage or disposal for each hazardous waste;
 - (G) For a collection site: The wastes shipped off-site, the destination, and the wastes still in storage;
 - (H) For a disposal site: The fees collected for accepting the wastes;
 - (I) Any other information that may be required by the management facility license; and
 - (J) The following certification signed and dated by a person identified in section (4) of this rule:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

(2) All closure cost estimates prepared under rule 340-108-200 and, for disposal facilities, post-closure cost estimates prepared under rule 340-108-400, shall be submitted to the Department within 45 days after the end of each calendar year.

(3) A facility that has arranged to receive hazardous waste from a foreign source must notify EPA in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

NOTE: Management facilities importing or exporting hazardous waste

shall also comply with rule 340-101-080.

(4) All reports required by these rules or the license, or requested by the Department, shall be signed by a person identified in rule 340-120-150(3) or by a duly authorized representative of that person. A person is a duly authorized representative if:

(a) The authorization is made in writing by a person identified in rule 340-120-150(3);

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the licensed facility, such as the position of plant manager, operator of a landfill, superintendent or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(c) The written authorization is submitted to the Department.

DIVISION 107
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Environmental Monitoring

Purpose

340-107-010 The purpose of this division is to establish standards for groundwater monitoring.

Authority

340-107-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-107-030 (1) The terms used in this division are defined by rule 340-100-030; and

(2) The following meanings and methods of derivation shall also apply to terms that appear in these rules:

(a) The "groundwater protection standard" is the group of conditions specified by the Department that the owner or operator must comply with to ensure that hazardous constituents entering groundwater from the facility do not exceed the concentration limits beyond the point of compliance during the compliance period.

(b) "Hazardous constituents" are constituents identified in Appendix 101.3 that have been detected in groundwater underlying the facility and that are reasonably expected to derive from wastes managed at the facility. The Department will specify the hazardous constituents to which the groundwater protection standard applies but may exclude specific constituents deemed to be incapable of posing a substantial present or potential hazard to human health or the environment. These exclusions will be based upon considerations of potential adverse effects on the quality of both groundwater and hydraulically connected surface water and will consider:

(A) The volume and physical and chemical characteristics of the wastes managed, including their potential for migration;

(B) The hydrogeological characteristics of the facility site and surrounding land;

(C) The quantity of groundwater and the direction of groundwater flow;

(D) The identification of underground sources of drinking water and exempted aquifers, including the proximity and withdrawal rates of groundwater users;

(E) The current and future uses of groundwater in the area;

(F) The existing quality of surface water and groundwater, including other sources of contamination and their cumulative impact on surface water and groundwater quality;

(G) The patterns of rainfall in the region;

(H) The proximity of the facility to surface waters;

(I) The current and future uses of surface water in the area and any water quality standards established for those surface waters;

(J) The potential for health risks caused by human exposure to the hazardous constituents;

(K) The potential damage to wildlife, crops, vegetation and physical

structures caused by exposure to the hazardous constituents; and

(L) The persistence and permanence of the potential adverse effects.

(c) The "concentration limits" are the maximum permissible concentrations of hazardous constituents. The Department will specify these concentration limits so that:

(A) They do not exceed background values at the time the license is issued; or

(B) For any of the hazardous constituents listed in Table 1 (Appendix 107.1): They do not exceed the value given in that table if it is above the background level; or

(C) If the Department determines that there is no present or potential hazard to human health or the environment: They do not exceed alternate concentration limits specified by the Department after a consideration of the potential adverse effects on the quality of both groundwater and hydraulically connected surface water that includes:

(i) The volume and physical and chemical characteristics of the wastes managed, including their potential for migration;

(ii) The hydrogeological characteristics of the facility and surrounding land;

(iii) The quantity of groundwater and the direction of groundwater flow;

(iv) The identification of underground sources of drinking water and exempted aquifers, including the proximity and withdrawal rates of groundwater users;

(v) The current and future uses of groundwater in the area;

(vi) The existing quality of surface water and groundwater, including other sources of contamination and their cumulative impact on the surface water and groundwater quality;

(vii) The patterns of rainfall in the region;

(viii) The proximity of the facility to surface waters;

(ix) The current and future uses of surface water in the area and any water quality standards established for those surface waters;

(x) The potential for health risks caused by human exposure to the hazardous constituents;

(xi) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to the hazardous constituents; and

(xii) The persistence and permanence of the potential adverse effects.

(d) The "waste management area" is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a facility and includes the horizontal space taken up by any liner, dike, or other barrier designed to contain the waste. If the waste management site contains more than one facility, the waste management area is described by an imaginary line circumscribing the several facilities.

(e) The "compliance point" is a vertical surface located at the hydraulically downgradient limit of the waste management area extending down into the groundwater.

(f) The "compliance period" is the number of years equal to the active life of the waste management area (including any waste management activity prior to licensing, and the closure period) and begins when the owner or operator initiates a compliance monitoring program.

If the owner or operator is engaged in a corrective action program at the end of the compliance period, the compliance period is extended until the owner or operator can demonstrate that the groundwater protection standard has not been exceeded for three consecutive years.

Applicability

340-107-040 (1) The rules of this division apply to owners or operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments, waste piles, landfills, or by land treatment, except if the owner or operator:

(a) Is exempt by rule 340-106-040 or he constructs and operates a surface impoundment in compliance with rule 340-113-160, a waste pile facility in compliance with rule 340-114-160, or a landfill in compliance with rule 340-116-160; or

(b) Demonstrates that there is no potential for migration of liquid from the facility to groundwater during its active life (including closure) and the post-closure care period specified under rule 340-108-300. This demonstration must be certified by a qualified geologist or geotechnical engineer. In order to provide an adequate margin of safety in predicting the potential for migration of liquid, the owner or operator shall base any predictions made under this paragraph on assumptions that maximize the rate of liquid migration considering the design, construction, operation and location of the facility.

(2) The rules of this division apply during the active life of the facility (including closure). After closure, the rules:

(a) Do not apply if all waste, waste residues, containment system components, soil, and structures and equipment contaminated with waste and leachate are removed or decontaminated at closure;

(b) Do not apply to a land treatment facility if the owner or operator demonstrates, pursuant to rule 340-115-620, that the treatment zone does not contain levels of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of rules 340-115-400 to -460 has not shown a statistically significant increase in hazardous constituents below the treatment zone during the operating life of the facility;

(c) Apply during the post-closure care period under rule 340-108-300 if the owner or operator is conducting a detection monitoring program; and

(d) Apply during the compliance period if the owner or operator is conducting a compliance monitoring program or a corrective action program.

(3) Any hazardous constituents migrating beyond the waste management area shall be assumed to originate from the facility unless the Department finds that they originated from another source.

Required Programs

340-107-050 (1) An owner or operator shall conduct:

(a)(A) A detection monitoring program pursuant to rules 340-107-200 to -260; or

(B) A compliance monitoring program pursuant to rules 340-107-300 to -350 whenever hazardous constituents are detected at the compliance point;

(b) A corrective action program pursuant to rules 340-107-400 to -460 whenever:

(A) The groundwater protection standard is violated; or

(B) Hazardous constituents from a facility exceed the concentration limits in the groundwater between the compliance point and the downgradient site property line;

(c) An unsaturated zone monitoring program pursuant to rule 340-107-500, whenever the Department, considering public health and the

environment, determines that it is necessary to detect hazardous constituents before they reach groundwater.

(2) The Department will specify the elements of the monitoring and response programs as are necessary to protect human health and the environment, and will define the circumstances under which they will be implemented.

(3) An owner or operator must renew his hazardous waste management facility license as necessary to ensure that all monitoring and corrective action measures necessary to achieve compliance with the groundwater protection standard are taken during the term of the license.

General Requirements

340-107-100 An owner or operator shall comply with the following requirements for any groundwater monitoring program developed to satisfy a detection monitoring program under rules 340-107-200 to -260, a compliance monitoring program under rules 340-107-300 to -350, or a corrective action program under rules 340-107-400 to -460:

(1) The groundwater monitoring system must consist of a sufficient number of monitoring wells, installed at appropriate locations and depths, to yield groundwater samples from the same aquifer that represent both the quality of background water that has not been affected by leakage from the facility and the quality of water passing the point of compliance.

(2) If a waste management site contains more than one facility, separate groundwater monitoring systems are not required for each facility provided that the system chosen will enable detection and measurement at the compliance point of hazardous constituents from any facility that may have entered the groundwater.

(3) All monitoring wells must be cased in a manner that maintains the integrity of the well bore hole. The casing must be screened or perforated, and packed with sand or gravel as necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling zone must be sealed to prevent contamination of samples and groundwater.

(4) The groundwater monitoring program must include:

(a) Consistent sampling procedures designed to ensure that monitoring results provide a reliable indication of groundwater quality below the waste management area. At a minimum, the program must include procedures and techniques for sample collection, preservation, and shipment, and chain of custody control;

(b) Analytical methods that are appropriate to the samples and that accurately measure the hazardous constituents in them; and

(c) A determination of the groundwater level each time groundwater is sampled.

(5) Where appropriate, the groundwater monitoring program must establish background groundwater quality values for each of the hazardous constituents and other parameters specified by the Department.

(a) In the detection monitoring program under rules 340-107-200 to -260, the background groundwater quality must be based on data from quarterly sampling of monitoring wells upgradient from the waste management area for one year.

(b) In the compliance monitoring program under rules 340-107-300 to -350, the background groundwater quality must be based on data from upgradient monitoring wells that:

(A) Is available before compliance monitoring begins;

(B) Accounts for measurements errors in sampling and analysis; and
(C) Accounts, to the extent feasible, for seasonal fluctuations in background groundwater quality if such fluctuations are expected to affect the concentrations of the hazardous constituents.

(c) Background groundwater quality may be based on sampling of monitoring wells that are not upgradient from the waste management area if:

(A) Hydrogeologic conditions do not allow the owner or operator to determine which monitoring wells are upgradient; or

(B) Sampling at other monitoring wells will provide an indication of background groundwater quality that is as representative as that provided by the upgradient monitoring wells.

(d) The samples used to determine background values must be obtained by sampling each background monitoring well with a minimum of four samples from the entire system every time the monitoring system is sampled.

(6) The following statistical procedures shall be used to determine whether background groundwater quality values or concentration limits have been exceeded:

(a) If, in a detection monitoring program, the level of a constituent at the compliance point is to be compared to the constituent's background value and that background value has a sample coefficient of variation less than 1.00:

(A) At least four portions from a sample at each monitoring well at the compliance point shall be taken and the determination made whether the difference between the mean of the constituent at each monitoring well (using all portions taken) and its background value is significant at the 0.05 level using the Cochran's Approximation to the Behrens-Fisher Student's t-test (Appendix 107.2). If the test indicates that the difference is significant, the procedure must be repeated with a fresh sample from the monitoring well. If this second round of analyses also indicates that the difference is significant, the owner or operator shall conclude that a statistically significant change has occurred; or

(B) The owner or operator may use an equivalent statistical procedure for determining whether a statistically significant change has occurred. The Department will approve such a procedure if it finds that the alternative procedure reasonably balances the probability of falsely identifying a non-contaminating facility and the probability of failing to identify a contaminating one in a manner that is comparable to that of the prescribed statistical procedure.

(b) In all other situations in a detection monitoring program and in a compliance monitoring program, the owner or operator shall use a statistical procedure providing reasonable confidence that migration of hazardous constituents from a facility into the groundwater will be identified. The Department will approve a statistical procedure that:

(A) Is appropriate for the distribution of the data used to establish background values or concentration limits; and

(B) Provides a reasonable balance between the probability of falsely identifying a non-contaminating facility and the probability of failing to identify a contaminating one.

Detection Monitoring Program

340-107-200 An owner or operator shall install a groundwater monitoring system at the compliance point in accordance with rule 340-107-100(1) to (3).

340-107-210 An owner or operator shall monitor for those parameters (e.g., specific conductance, total organic carbon, total organic halogen), hazardous constituents, and reaction products that provide a reliable indication of the leaching of hazardous wastes to groundwater. These indicators will be specified by the Department, after considering the following factors:

- (1) The types, quantities, and concentrations of hazardous and other constituents in the wastes managed;
- (2) The mobility, stability, and persistence of the hazardous constituents or their reaction products in the unsaturated zone beneath the waste management area;
- (3) The detectability of the indicators in the groundwater; and
- (4) Their concentrations or values and coefficients of variation in the background groundwater.

340-107-220 An owner or operator shall establish a background value for each indicator specified by the Department pursuant to rule 340-107-210. In so doing, he shall:

- (1) Comply with rule 340-107-100(5) in establishing how the background values are to be obtained;
- (2) Use a groundwater monitoring system that complies with rule 340-107-100(1) to (3); and
- (3) Express the background values in the form necessary to determine statistically significant increases pursuant to rule 340-107-100(6).

340-107-230 An owner or operator shall operate the groundwater monitoring system until the end of the post-closure care period using the procedures for sampling and analysis specified by rule 340-107-100(4) to determine:

- (1) Semi-annually: The groundwater quality at each monitoring well at the compliance point, unless otherwise required by the Department, expressing the data in the form necessary to determine statistically significant increases pursuant to rule 340-107-100(6); and
- (2) Annually: The groundwater flow rate and direction.

340-107-240 An owner or operator shall determine whether there is a statistically significant increase over background values for each indicator specified by the Department pursuant to rule 340-107-210 each time he monitors groundwater pursuant to rule 340-107-230.

(1) Each indicator in each monitoring well at the compliance point shall be compared to its background value according to the statistical procedure approved by the Department under rule 340-107-100(6); and

(2) The comparison must be made within a reasonable time after completion of sampling. The Department will specify the time period, after considering the complexity of the statistical procedure and the availability of laboratory facilities to perform the analysis of groundwater samples.

340-107-250 If, pursuant to rule 340-107-240, an owner or operator determines that there is a statistically significant increase over the background value for any specified indicator at any monitoring well at the compliance point, he shall take the action indicated by either sections (1) or (2) of this rule:

(1)(a) Notify the Department of the findings in writing within seven days specifying which indicators have shown statistically significant

increases;

(b) Immediately sample the groundwater in all monitoring wells and determine the concentration of all hazardous constituents listed in Appendix 101.3 that are present;

(c) Establish a background value for each hazardous constituent that has been found in accordance with the procedure outlined in rule 340-107-220;

(d) Within 90 days: Submit to the Department a plan to establish a compliance monitoring program meeting the requirements of rules 340-107-300 to -350 including the following information:

(A) The concentration of any hazardous constituents found in the groundwater at each monitoring well at the compliance point;

(B) Any proposed changes to the groundwater monitoring system, monitoring frequency, sampling and analysis, or statistical procedures necessary to establish a compliance monitoring program under rules 340-107-300 to -350; and

(C) For each hazardous constituent found at the compliance point, a proposed concentration limit based on rule 340-107-030(2)(c)(A) or (B), or a notice of intent to seek an alternate limit under rule 340-107-030(2)(c)(C).

(e) Within 180 days: Submit to the Department:

(A) All data necessary to justify any alternate concentration limit sought in a hazardous constituent; and

(B) An engineering feasibility plan for the corrective action program necessary to meet the requirements of rules 340-107-400 to -460, unless:

(i) All the hazardous constituents found in the groundwater are listed in Table 1 and their concentrations do not exceed the values given in that table; or

(ii) An alternate concentration limit has been sought for every hazardous constituent found.

(2) An owner or operator may demonstrate that a source other than the facility caused the increase or that it resulted from error in sampling, analysis, or evaluation. To make this demonstration, the owner or operator shall:

(a) Within 7 days: Notify the Department in writing that he intends to make a demonstration under this section;

(b) Within 90 days: Submit to the Department:

(A) The demonstration that a source other than the facility caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation;

(B) A plan to make any appropriate changes to the detection monitoring program; and

(C) A plan to establish a compliance monitoring program meeting the requirements of rules 340-107-300 to -350. This plan need not be implemented if the demonstration is successful. The plan must include the following information:

(i) The concentration of any hazardous constituents found in the groundwater at each monitoring well at the compliance point;

(ii) Any proposed changes to the groundwater monitoring system, monitoring frequency, sampling and analysis, or statistical procedures necessary to establish a compliance monitoring program under rules 340-107-300 to -350; and

(iii) For each hazardous constituent found at the compliance point, a proposed concentration limit based on rule 340-107-030(2)(c)(A) or (B), or a notice of intent to seek an alternate limit under rule

340-107-030(2)(c)(C); and

(c) Continue to monitor in accordance with the established detection monitoring program.

340-107-260 If an owner or operator determines that the detection monitoring program no longer satisfies the requirements of these rules, he shall, within 90 days, submit a plan to the Department to make any appropriate changes as may be necessary.

Compliance Monitoring Program

340-107-300 An owner or operator shall install a groundwater monitoring system at the compliance point in accordance with rule 340-107-100 (1) to (3).

340-107-310 An owner or operator shall monitor the groundwater to determine whether the facility is in compliance with the groundwater protection standard.

(1) The groundwater protection standard will be specified by the Department and include:

- (a) A list of hazardous constituents;
- (b) A concentration limit for each of those hazardous constituents;
- (c) The compliance point; and
- (d) The compliance period.

(2) If the Department proposes to establish a concentration limit based on background groundwater quality, the owner or operator shall:

(a) Comply with rule 340-107-100(5) in establishing how the background values are to be obtained;

(b) Use a groundwater monitoring system that complies with rule 340-107-100(1) to (3);

(c) Express the background values in the form necessary to determine statistically significant increases pursuant to rule 340-107-100(6); and

(d) Assist the Department in establishing the concentration limits as follows:

(A) If there is a high temporal correlation between upgradient and compliance point groundwater quality, the concentration limit may be established through sampling at upgradient monitoring wells each time groundwater is sampled at the compliance point. The Department will specify the procedures to be used to determine the concentration limit in this manner. In all other cases, the concentration limit will be the mean of the pooled data on the concentration of the hazardous constituent.

(B) If a hazardous constituent is identified in Table 1 and the difference between the concentration limit in Table 1 and the background value of that constituent is not statistically significant, the background value of the constituent must be used as the concentration limit. The determination of statistical significance must be appropriate for the distribution of the data used to establish background values; and provide a reasonable balance between the probability of falsely identifying a significant difference and failing to identify a significant difference.

340-107-320 An owner or operator shall operate the groundwater monitoring system until the end of the compliance period using the procedures for sampling and analysis specified by rule 340-107-100(4) to determine:

- (1) Quarterly: The concentration of hazardous constituents in

groundwater at each monitoring well at the compliance point, unless otherwise required by the Department, expressing the data in the form necessary to determine statistically significant increases pursuant to rule 340-107-100(6);

(2) Annually: The groundwater flow rate and direction; and

(3) Annually: The concentration of all hazardous constituents listed in Appendix 101.3 to determine whether additional hazardous constituents have migrated to groundwater. If any hazardous constituents are found in the groundwater that have not been previously identified, the owner or operator shall report the concentrations of these additional hazardous constituents to the Department within seven days after completion of the analysis.

340-107-330 An owner or operator shall determine whether there is a statistically significant increase over the concentration limits for any hazardous constituents specified by the Department pursuant to rule 340-107-310 each time he monitors groundwater pursuant to rule 340-107-320.

(1) The groundwater quality at each monitoring well at the compliance point must be compared for each hazardous constituent to the concentration limit for that constituent; and

(2) The comparison must be made within a reasonable time after completion of sampling. The Department will specify the time period, after considering the complexity of the statistical procedure and the availability of laboratory facilities to perform the analysis of groundwater samples.

340-107-340 If, pursuant to rule 340-107-330, an owner or operator determines that the groundwater protection standard is being exceeded at any monitoring well at the compliance point, he shall take the action indicated by either sections (1) or (2) of this rule:

(1)(a) Notify the Department of the findings in writing within seven days specifying which concentration limits have been exceeded; and

(b) Within 180 days, or within 90 days if an engineering feasibility study has been previously submitted to the Department under rule 340-107-250(1)(e): Submit to the Department a plan to establish a corrective action program meeting the requirements of rules 340-107-400 to -460. The plan must at a minimum contain:

(A) A description of the corrective actions that will achieve compliance with the groundwater protection standard specified by the Department; and

(B) A plan for a groundwater monitoring program that will demonstrate the effectiveness of these actions. This program may be based on a compliance monitoring program developed to meet the requirements of these rules.

(2) An owner or operator may demonstrate that a source other than the facility caused the increase or that it resulted from error in sampling, analysis, or evaluation. To make this demonstration, the owner or operator shall:

(a) Within 7 days: Notify the Department in writing that he intends to make a demonstration under this section;

(b) Within 90 days: Submit to the Department:

(A) The demonstration that a source other than the facility caused the standard to be exceeded or that the apparent noncompliance with the standard resulted from error in sampling, analysis, or evaluation; and

(B) A plan to make any appropriate changes to the compliance monitoring program;

(c) Within 180 days, or within 90 days if an engineering feasibility study has been previously submitted to the Department under rule 340-107-250(1)(e): Submit to the Department a plan to establish a corrective action program meeting the requirements of rules 340-107-400 to -460. The plan must at a minimum contain:

(A) A description of the corrective actions that will achieve compliance with the groundwater protection standard specified by the Department; and

(B) A plan for a groundwater monitoring program that will demonstrate the effectiveness of these actions. This program may be based on a compliance monitoring program developed to meet the requirements of these rules; and

(d) Continue to monitor in accordance with the established compliance monitoring program.

340-107-350 If an owner or operator determines that the compliance monitoring program no longer satisfies the requirements of these rules, he shall, within 90 days, submit a plan to the Department to make any appropriate changes as may be necessary.

Corrective Action Program

340-107-400 (1) An owner or operator shall implement a corrective action program as necessary to ensure that groundwater under the facility is in compliance with the groundwater protection standard specified by the Department.

(2) A corrective action program shall consist of either removing the hazardous constituents from groundwater or treating them in place. The Department will specify the specific measures to be taken which may vary upgradient and downgradient from the compliance point.

340-107-410 An owner or operator shall initiate a corrective action program within a reasonable time after the groundwater protection standard is violated. If the owner or operator has, in advance of need, prepared an approved corrective action program in addition to a compliance monitoring program, the program will state when it is to begin and will supersede the requirements of rule 340-107-340(1)(b).

340-107-420 (1) An owner or operator shall continue the corrective action program until the end of the compliance period as necessary to ensure that the groundwater protection standard is not violated.

(2) If the groundwater protection standard is still being violated at the end of the compliance period, the owner or operator shall continue the corrective action program until, based on data from the groundwater monitoring under rule 340-107-440, the groundwater protection standard has not been violated for a period of three consecutive years.

340-107-430 In addition to any other requirements of these rules, an owner or operator shall conduct a corrective action program to remove or treat in place any hazardous constituents that exceed concentration limits in groundwater between the compliance point and the downgradient site property line. The Department will specify the measures to be taken.

(1) Corrective action must be initiated and completed within a

reasonable period of time considering the extent of contamination; and

(2) Corrective action may be terminated when the concentrations of hazardous constituents are reduced to levels below their respective concentration limits.

340-107-440 As part of a corrective action program, an owner or operator shall implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action. Such monitoring may be based on the requirements for a compliance monitoring program and must be equally effective in determining compliance with the groundwater protection standard and the success of the corrective action program.

340-107-450 An owner or operator shall submit to the Department a semi-annual written report on the effectiveness of the corrective action program.

340-107-460 If an owner or operator determines that the corrective action program no longer satisfies the requirements of these rules, he shall, within 90 days, submit a plan to the Department to make any appropriate changes as may be necessary.

Unsaturated Zone Monitoring Program

340-107-500 An owner or operator shall establish an unsaturated zone monitoring program consisting of soil-pore liquid monitoring in the zone immediately below a facility to determine whether hazardous constituents have migrated out of the facility. The Department will approve the components of this program based on a consideration of the construction and operation of the facility and the type and amount of waste being managed therein.

PCB Monitoring Program

340-107-550 An owner or operator of a landfill disposing of PCB wastes shall establish the following PCB monitoring program subject to Department approval:

(1) If the underlying soil is homogenous and uniformly sloping in one direction, only three groundwater monitoring wells will be necessary. These three monitoring wells shall be spaced about a line through the center of the PCB disposal area with one monitoring well in the area of highest water table elevation and the other two in the area of lowest water table elevation.

(2) Background monitoring of surface water and groundwater shall be conducted prior to any disposal to establish background data.

(3) Surface water, groundwater and leachate collection systems shall be monitored monthly while the landfill is active and semi-annually after closure.

(4) At a minimum, all samples shall be analyzed for PCBs, pH, specific conductance, and total organic halogen.

TABLE 1

MAXIMUM CONCENTRATION OF SELECTED HAZARDOUS
CONSTITUENTS FOR GROUNDWATER PROTECTION

Constituent	Maximum Concentration (mg/l)
Arsenic.....	0.05
Barium.....	1.0
Cadmium.....	0.01
Chromium.....	0.05
Lead.....	0.05
Mercury.....	0.002
Selenium.....	0.01
Silver.....	0.05
Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,- 7,8,8a-octahydro-1,4-endo, endo-5,8-dimethano naphthalene)...	0.0002
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer).....	0.004
Methoxychlor (1,1,1-trichloro-2,2-bis (p-methoxyphenyl) ethane)	0.1
Toxaphene (Technical chlorinated camphene, 67-69% chlorine).....	0.005
2,4-D, (2,4-Dichlorophenoxyacetic acid).....	0.1
2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid).....	0.01

Appendix 107.2

observations in the set of data.

The t-test uses these data summary measures to calculate a t-statistic (t^*) and a comparison t-statistic (t_c). The t^* value is compared to the t_c value and a conclusion reached as to whether there has been a statistically significant change in any indicator parameter.

The t-statistic for all parameters except pH and similar monitoring parameters is:

$$t^* = \frac{X_m - \bar{X}_B}{\sqrt{\frac{s_m^2}{n_m} + \frac{s_B^2}{n_B}}}$$

If the value of this t-statistic is negative then there is no significant difference between the monitoring data and background data. It should be noted that significantly small negative values may be indicative of a failure of the assumption made for test validity or errors have been made in collecting the background data.

The t-statistic (t_c), against which t^* will be compared, necessitates finding t_B and t_m from standard (one-tailed) tables where,

t_B = t-tables with $(n_B - 1)$ degrees of freedom, at the 0.05 level of significance.

t_m = t-tables with $(n_m - 1)$ degrees of freedom, at the 0.05 level of significance.

Finally, the special weightings W_B and W_m are defined as:

$$W_B = \frac{s_B^2}{n_B} \quad \text{and} \quad W_m = \frac{s_m^2}{n_m}$$

and so the comparison t-statistic is:

$$t_c = \frac{W_B t_B + W_m t_m}{W_B + W_m}$$

The t-statistic (t^*) is now compared with the comparison t-statistic (t_c) using the following decision-rule:

If t^* is equal to or larger than t_c , then conclude that there most likely has been a significant increase in this specific parameter.

If t^* is less than t_c , then conclude that most likely there has not been a change in this specific parameter.

The t-statistic for testing pH and similar monitoring parameters is constructed in the same manner as previously described except the negative sign (if any) is discarded and the caveat concerning the negative value is ignored. The standard (two-tailed) tables are used in the construction t_c for pH and similar monitoring parameters.

If t^* is equal to or larger than t_c , then conclude that there most likely has been a significant increase (if the initial t^* had been negative, this would imply a significant decrease). If t^* is less than t_c , then conclude that there most likely has been no change.

A further discussion of the test may be found in *Statistical Methods* (6th Edition, Section 4.14) by G. W. Snedecor and W. G. Cochran, or *Principles and Procedures of Statistics* (1st Edition, Section 5.8) by R. G. D. Steel and J. H. Torrie.

STANDARD T-TABLES 0.05 LEVEL OF SIGNIFICANCE

Degrees of freedom	t-values (one-tail)	t-values (two-tail)
1	6.314	12.706
2	2.920	4.303
3	2.353	3.182
4	2.132	2.776
5	2.015	2.571
6	1.943	2.447
7	1.895	2.365
8	1.860	2.306
9	1.833	2.262
10	1.812	2.228
11	1.796	2.201
12	1.782	2.179
13	1.771	2.160
14	1.761	2.145
15	1.753	2.131
16	1.746	2.120
17	1.740	2.110
18	1.734	2.101
19	1.729	2.093
20	1.725	2.088
21	1.721	2.080
22	1.717	2.074
23	1.714	2.069
24	1.711	2.064
25	1.708	2.060
30	1.697	2.042
40	1.684	2.021

Adopted from Table III of "Statistical Tables for Biological, Agricultural, and Medical Research" (1947, R. A. Fisher and F. Yates).

Cochran's Approximation to the Behrens-Fisher Students' t-test

Using all the available background data (n_B readings), calculate the background mean (\bar{X}_B) and background variance (s_B^2). For the single monitoring well under investigation (n_m reading), calculate the monitoring mean (\bar{X}_m) and monitoring variance (s_m^2).

For any set of data (X_1, X_2, \dots, X_n) the mean is calculated by:

$$\bar{X} = \frac{X_1 + X_2 + \dots + X_n}{n}$$

and the variance is calculated by:

$$s^2 = \frac{(X_1 - \bar{X})^2 + (X_2 - \bar{X})^2 + \dots + (X_n - \bar{X})^2}{n-1}$$

where "n" denotes the number of

DIVISION 108
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Closure, Post-Closure, and Liability

Purpose

340-108-010 The purpose of this division is to specify technical and financial requirements for the closure and post-closure care of a hazardous waste management facility and the liability requirements for such facility.

Authority

340-108-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-108-030 The terms used in this division are defined by rule 340-100-030 and the following:

(1) "Closure plan" means the plan for closure prepared in accordance with the requirements of rule 340-108-110.

(2) "Current closure cost estimate" means the most recent closure cost estimate prepared to meet the requirements of rule 340-108-200.

(3) "Current post-closure cost estimate" means the most recent post-closure care cost estimate prepared to meet the requirements of rule 340-108-400.

(4) "Parent corporation" means a corporation which directly owns at least 50% of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

(5) "Post-closure plan" means the plan for post-closure care prepared in accordance with the requirements of rule 340-108-310.

(6) The following terms are used in the specifications for the financial tests for closure, post-closure care and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

(a) "Assets" means all existing and probable future economic benefits obtained or controlled by a particular entity.

(b) "Current assets" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

(c) "Current liabilities" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

(d) "Independently audited" refers to an audit performed by an independent certified public accountant in accordance with generally accepted accounting practices.

(e) "Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

(f) "Net working capital" means current assets minus current liabilities.

(g) "Net worth" means total assets minus total liabilities and is equivalent to owner's equity.

(h) "Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

(7) In the liability insurance requirements the terms "bodily injury" and "property damage" shall have the meanings given these terms by applicable State law. However, these terms do not include those liabilities which, consistent with standard industry practices, are excluded from coverage in liability policies for bodily injury and property damage. The Department intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.

(a) "Accidental occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

(b) "Legal defense costs" means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

(c) "Nonsudden accidental occurrence" means an occurrence which takes place over time and involves continuous or repeated exposure.

(d) "Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

Applicability

340-108-040 The rules of this division apply to owners or operators of hazardous waste management facilities except:

(1) As may be exempted by rule 340-106-040.

(2) Rules 340-108-300 to -320 apply only to owners or operators of:

(a) Landfills; and

(b) Surface impoundments, waste pile facilities, and land treatment facilities, to the extent that this division is made applicable to such facilities by Divisions 113 to 115.

(3) Rules 340-108-400 to -450 apply only to owners or operators of landfills.

(4) States and the federal government need comply only with rules 340-108-100 to -150 and -300 to -320.

Closure, Technical

340-108-100 An owner or operator shall close a facility in a manner that:

(1) Minimizes the need for further maintenance, and

(2) Controls, minimizes or eliminates, to the extent necessary to prevent threats to human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or waste decomposition products to surface water or groundwater or to the atmosphere.

340-108-110 (1) An owner or operator shall have a written closure plan. The plan must be approved by the Department at the time the facility is approved or licensed. The Department will verify that that approved closure plan is consistent with these rules and the applicable requirements of Divisions 111 to 117. A copy of the approved plan and all revisions to the plan must be kept at the facility until closure is completed and certified in accordance with rule 340-108-140. The plan must identify steps necessary to completely or partially close the facility at any point during its intended operating life and to completely close the facility at the end of its life. At a minimum, the closure plan must include:

(a) A description of how and when the facility will be partially closed, if applicable, and finally closed. The description must identify the maximum extent of active operations during the life of the facility, and how the requirements of these rules and the applicable closure requirements of Divisions 111 to 117 will be met;

(b) An estimate of the maximum inventory of wastes in storage and in treatment at any time during the life of the facility;

(c) A description of the steps needed to decontaminate facility equipment during closure; and

(d) An estimate of the expected year of closure and a schedule for final closure. The schedule must include, at a minimum, the total time required to close the facility and the time required for intervening closure activities which will allow tracking of the progress of closure. (For example, in the case of a landfill, estimates of the time required to dispose of all waste inventory and of the time required to place a final cover must be included.)

(2) An owner or operator may amend the closure plan at any time during the active life of the facility; but shall amend the plan whenever changes in operation or facility design affect the closure plan, or there is a change in the expected year of closure.

340-108-120 (1) An owner or operator shall notify the Department of an intended facility closure at least 180 days prior to the date on which he expects to receive the final load of waste.

(2) An owner or operator shall begin closure within 30 days after the date on which the facility has received its final load of waste.

(3) Within 90 days after beginning closure, an owner or operator shall treat, remove from the site, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Department may approve a longer period if the owner or operator demonstrates that:

(a)(A) Such activities will, of necessity, take longer than 90 days to complete; or

(B)(i) The facility has the capacity to receive additional wastes;

(ii) There is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site; and

(iii) Closure of the facility would unduly compromise the continued operation of the site; and

(b) He has taken and will continue to take all steps to prevent threats to human health and the environment.

(4) Within 180 days after beginning closure, an owner or operator shall complete closure activities in accordance with the approved closure plan. The Department may approve a longer closure period if the owner or operator demonstrates that:

(a)(A) The closure activities will, of necessity, take longer than 180 days to complete; or

- (B)(i) The facility has the capacity to receive additional wastes;
 - (ii) There is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site; and
 - (iii) Closure of the facility would unduly compromise the continued operation of the site; and
- (b) He has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but inactive facility.

340-108-130 Before closure is completed:

- (1) All non-landfill facility equipment and structures, residues and soil contaminated by hazardous waste must be properly decontaminated or disposed (except as permitted by rules 340-113-300(2) and 340-114-300(2)); and
- (2) All covers, containment systems and monitoring equipment required to remain in place must be inspected to ensure their post-closure functionability.

340-108-140 When closure is completed, an owner or operator must submit to the Department certification by both himself and by an independent registered professional engineer that the facility has been closed in accordance with the approved closure plan. An independent qualified soil scientist may substitute for the engineer in the event of closure of a land treatment facility.

Closure, Financial

340-108-200 An owner or operator shall prepare a written estimate, in current dollars, of the cost of closing the facility in accordance with the closure plan as specified by rule 340-108-110. The closure cost estimate must equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.

(1) The closure cost estimate must be adjusted for inflation within 30 days after each anniversary of the date on which the first closure cost estimate was prepared. The adjustment must be made using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor is calculated by dividing the latest published annual Deflator by the Deflator for the previous year.

(a) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

(b) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

(2) The closure cost estimate must be revised whenever a change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in section (1) of this rule.

(3) An owner or operator shall keep the latest adjusted closure cost estimate at the facility during its operating life.

340-108-210 An owner or operator of a hazardous waste disposal facility shall establish financial assurance for closure of the facility in accordance with section (1) of this rule. An owner or operator of a

hazardous waste treatment or storage facility shall choose one of the options specified in sections (1) to (6) of this rule:

(1) An owner or operator may satisfy the requirements of this rule by establishing a closure trust fund; however, during the period the current closure cost estimate (CE) exceeds the current value of the trust fund (CV), the owner or operator must also establish supplemental financial assurance in the amount CE-CV by choosing one of the options specified in sections (2) to (6) of this rule.

An owner or operator shall submit an originally signed duplicate of the trust agreement to the Department. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The trustee must be a entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or State agency.

(a) The wording of the trust agreement must be identical to the wording specified in Appendix 108.1, and must be accompanied by a formal certification of acknowledgement such as in Appendix 108.2. Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

(b) Payments into the trust fund must be made annually by the owner or operator over a term of ten years or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments to the closure trust fund must be made as follows:

(A) For a new facility, the first payment must be made before the initial receipt of hazardous waste for treatment, storage, or disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Department before this initial receipt of hazardous waste. The first payment must be at least equal to the current closure cost estimate, except as provided in rule 340-108-220, divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by the formula:

$$\text{Next payment} = \frac{\text{CE} - \text{CV}}{\text{Y}}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(B) If an owner or operator has an established trust fund but its value is less than the current closure cost estimate when a license is awarded for the facility, the amount of the current closure cost estimate still to be paid into the trust fund must be paid in over the pay-in period as defined in this paragraph. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made to the fund. The amount of each payment must be determined by the formula:

$$\text{Next payment} = \frac{\text{CE} - \text{CV}}{\text{Y}}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(c) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current closure cost estimate at the time the fund is established. However, the value of the fund must be maintained at no less than the value the fund would have if annual payments were made as specified in subsection (b) of this section.

(d) If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in this rule, his first payment shall be at least the amount that the fund would have contained if the trust fund were established initially and annual payments made according to paragraph (b)(A) of this section.

(e) After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days of the change in the cost estimate, shall either deposit a sufficient amount into the fund so that its value after payment at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in this rule to cover the difference.

(f) If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the Department for release of the amount in excess of the current closure cost estimate.

(g) If an owner or operator of a hazardous waste treatment or storage facility substitutes other financial assurance as specified in this rule for all or part of the trust fund, he may submit a written request to the Department for release of the amount in excess of the current cost estimate covered by the trust fund.

(h) Within 60 days after receiving a request from the owner or operator for release of funds as specified in subsections (f) and (g) of this section, the Department will send a written request to the trustee to release such funds.

(i) After beginning final closure, an owner or operator or any other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the Department. Within 60 days after receiving bills for closure activities, the Department will determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, will send a written request to the trustee to make reimbursements. If the Department has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, it may withhold reimbursement of such amounts as is deemed prudent until it is determined, in accordance with rule 340-108-240, that the owner or operator is no longer required to maintain financial assurance for closure.

(j) The Department will agree to termination of the trust when:

(A) An owner or operator substitutes alternate financial assurance as specified in this rule, or

(B) The Department releases the owner or operator from the requirements of this rule in accordance with rule 340-108-240.

(2) An owner or operator may satisfy the requirements of this rule by obtaining a surety bond guaranteeing payment into a closure trust fund which conforms to the requirements of this part and submitting the bond to the Department. An owner or operator of a new facility shall submit the surety bond at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be

effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. Department of the Treasury.

(a) The wording of the surety bond must be identical to the wording specified in Appendix 108.3.

(b) The owner or operator shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Department. This standby trust fund must meet the requirements specified in section (1) of this rule, except that:

(A) An originally signed duplicate of the trust agreement must be submitted to the Department with the surety bond; and

(B) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(i) Payments into the trust fund as specified in section (1) of this rule;

(ii) Updating of Schedule A of the trust agreement (Appendix 108.1) to show current closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(c) The bond must guarantee that the owner or operator will:

(A) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(B) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin closure is issued by the Department or by a court of competent jurisdiction; or

(C) Provide alternate financial assurance as specified in this rule, and obtain the Department's written approval of such assurance, within 90 days after receipt of a notice of cancellation of the bond from the surety.

(d) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(e) The penal sum of the bond must be at least equal to the amount of the current closure cost estimate, except as provided in rule 340-108-220.

(f) Whenever the current closure cost estimate increases to an amount greater than the amount of the penal sum, the owner or operator, within 60 days after the increase, shall either increase the penal sum of the bond to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate upon written approval by the Department.

(g) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, within the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

(h) The owner or operator may cancel the bond if the Department has given prior written consent based on receipt of evidence of alternate financial assurance as specified in this rule.

(3) An owner or operator may satisfy the requirements of this rule by obtaining a surety bond guaranteeing performance of closure which conforms to the requirements of this part and submitting the bond to the Department. An owner or operator of a new facility shall submit the bond at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal, and it must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. Department of the Treasury.

(a) The wording of the surety bond must be identical to the wording specified in Appendix 108.4.

(b) The owner or operator shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Department. This standby trust fund must meet the requirements specified in section (1) of this rule, except that:

(A) An originally signed duplicate of the trust agreement must be submitted to the Department with the surety bond; and

(B) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(i) Payments into the trust fund as specified in section (1) of this rule;

(ii) Updating of Schedule A of the trust agreement (Appendix 108.1) to show current closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(c) The bond must guarantee that the owner or operator will:

(A) Perform final closure in accordance with the closure plan and other license requirements whenever required to do so; or

(B) Provide alternate financial assurance as specified in this rule, and obtain the Department's written approval of such assurance, within 90 days after receipt of a notice of cancellation of the bond from the surety.

(d) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the Department that the owner or operator has failed to perform closure in accordance with the closure plan and other license requirements when required to do so, under the terms of the bond the surety will perform final closure as guaranteed by the bond or will deposit the amount of the penal sum into the standby trust fund.

(e) The penal sum of the bond must be at least equal to the amount of the current closure cost estimate.

(f) Whenever the current closure cost estimate increases to an amount greater than the amount of the penal sum of the bond, the owner or operator, within 60 days after the increase, shall either increase the penal sum of the bond to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate upon written approval by the Department.

(g) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, within the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

(h) The owner or operator may cancel the bond if the Department has given prior written consent. Such written consent will be provided when:

(A) An owner or operator substitutes alternate financial assurance as specified in this rule, or

(B) The Department releases the owner or operator from the requirements of this rule in accordance with rule 340-108-240.

(i) The surety will not be liable for deficiencies in the performance of closure by the owner or operator after the Department releases the owner or operator from the requirements of this rule in accordance with rule 340-108-240.

(4) An owner or operator may satisfy the requirements of this rule by obtaining an irrevocable standby letter of credit which conforms to the requirements of this part and submitting the letter to the Department. An

owner or operator of a new facility shall submit the letter of credit at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal, and its credit must be effective before the initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(a) The wording of the letter of credit must be identical to the wording specified in Appendix 108.5.

(b) The owner or operator shall also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid thereunder will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Department. The standby trust fund must meet the requirements of the trust fund specified in section (1), except that:

(A) An originally signed duplicate of the trust agreement must be submitted to the Department with the letter of credit; and

(B) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(i) Payments into the trust fund as specified in section (1) of this rule;

(ii) Updating of Schedule A of the trust agreement (Appendix 108.1) to show current closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(c) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: EPA identification number, name, and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

(d) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Department by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120-day period will begin on the date when both the owner or operator and the Department have received the notice, as evidenced on the return receipts.

(e) The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in rule 340-108-220.

(f) Whenever the current closure cost estimate increases to an amount greater than the amount of credit, the owner or operator, within 60 days after the increase, shall either increase the amount of credit to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Department or obtain other financial assurance as specified in this rule to cover the increase. Whenever the adjusted closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate upon written approval by the Department.

(g) Following a determination by the Department that the owner or operator has failed to perform closure in accordance with the closure plan and other license requirements when required to do so, the Department may draw on the letter of credit.

(h) If the owner or operator does not establish and obtain the Department's written approval of alternate financial assurance as specified in this rule within 90 days after receipt of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Department will draw on the letter of credit. The Department may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Department will draw on the letter of credit if the owner or operator has still failed to provide approved alternate financial assurance.

(i) The Department will return the letter of credit to the issuing institution for termination when:

(A) An owner or operator substitutes alternate financial assurance as specified in this rule; or

(B) The Department releases the owner or operator from the requirements of this rule in accordance with rule 340-108-240.

(5) An owner or operator may satisfy the requirements of this rule by obtaining closure insurance which conforms to the requirements of this part and submitting a certificate of such insurance to the Department. An owner or operator of a new facility must submit the certificate of insurance at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

(a) The wording of the certificate of insurance must be identical to the wording specified in Appendix 108.6.

(b) The closure insurance policy must be issued for a face amount at least equal to the current closure cost estimate, except as provided in rule 340-108-220. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(c) The closure insurance policy must guarantee that funds will be available to close the facility whenever final closure occurs. The policy must also guarantee that once final closure begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Department, to such parties as the Department may specify.

(d) After beginning final closure, an owner or operator or any other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the Department. Within 60 days after receiving bills for closure activities, the Department will determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, will send a written request to the insurer to make reimbursements. If the Department has reason to believe that the cost of closure will be significantly greater than the face amount of the policy, it may withhold reimbursement of such amounts as is deemed prudent until it is determined, in accordance with rule 340-108-240, that the owner or operator is no longer required to maintain financial assurance for closure of the facility.

(e) The owner or operator shall maintain the policy in full force and effect until the Department consents to termination of the policy by the owner or operator as specified in subsection (h) of this section. Failure

to pay the premium, without substitution of alternate financial assurance as specified in this rule, constitutes a violation of these rules. Such violation will be deemed to begin upon receipt by the Department of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium.

(f) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and to the Department. Cancellation, termination, or failure to renew may not occur, however, within 120 days beginning with the date of receipt of the notice by both the Department and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(A) The Department deems the facility abandoned; or

(B) The license is terminated or revoked or a new license denied; or

(C) Closure is ordered by the Department or a court of competent jurisdiction; or

(D) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(E) The premium due is paid.

(g) Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, shall either increase the face amount to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate upon written approval by the Department.

(h) The Department will give written consent to the owner or operator to terminate the insurance policy when:

(A) He substitutes alternate financial assurance as specified in this rule, or

(B) The Department releases the owner or operator from the requirements of this rule in accordance with rule 340-108-240.

(6) An owner or operator may satisfy the requirements of this rule by passing a financial test which conforms to the requirements of this section and submitting evidence of such passage to the Department.

(a) Passing the financial test consists of meeting the criteria of either paragraphs (A) or (B) of this subsection:

(A) The owner or operator must have:

(i) Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; or a ratio of current assets to current liabilities greater than 1.5;

(ii) Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates;

(iii) Tangible net worth of at least \$10 million; and

(iv) Assets in the United States amounting to at least 90% of his total assets or at least six times the sum of the current closure and post-

closure cost estimates.

(B) The owner or operator must have:

(i) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Bbb as issued by Moody's;

(ii) Tangible net worth at least six times the sum of the current closure and post-closure cost estimates;

(iii) Tangible net worth of at least \$10 million; and

(iv) Assets in the United States amounting to at least 90% of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

NOTE: The phrase "current closure and post-closure cost estimates" refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner or operator's chief financial officer (Appendix 101.7).

(b) The owner or operator shall demonstrate that he passes the financial test by submitting the following items to the Department at least 60 days before the date on which hazardous wastes is first received for treatment, storage, or disposal. The items must be updated within 90 days after the close of each succeeding fiscal year:

(A) A letter signed by the owner or operator's chief financial officer and worded as specified in Appendix 101.7;

(B) A copy of the independent certified public accountant's report on examination of the owner or operator's financial statements for the latest completed fiscal year; and

(C) A special report from the owner or operator's independent certified public accountant to the owner or operator stating that:

(i) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(ii) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(c) If the owner or operator no longer meets the requirements of this section, he shall send notice to the Department of intent to establish alternate financial assurance as specified in this rule. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator shall provide the alternate financial assurance within 120 days after the end of such fiscal year.

(d) The Department may, based on a reasonable belief that the owner or operator no longer meets the requirements of subsection (a) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in subsection (b) of this section. If the Department finds, on the basis of such reports or other information, that the owner or operator no longer meets such requirements, the owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of such a finding.

(e) The Department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner or operator's financial statements. An adverse opinion or a disclaimer of opinion will

be cause for disallowance. The Department will evaluate other qualifications on an individual basis. The owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of the disallowance.

(f) The owner or operator is no longer required to submit the items specified in subsection (b) of this section when:

(A) An owner or operator substitutes alternate financial assurance as specified in this rule; or

(B) The Department releases the owner or operator from the requirements of this part in accordance with rule 340-108-240.

(g) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator, must meet the requirements for owners or operators in this part, and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in Appendix 108.9 and accompany the items sent to the Department as specified in subsection (b) of this section. The terms of the corporate guarantee must provide that:

(A) If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other license requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in section (1) of this rule in the name of the owner or operator.

(B) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, within 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

(C) If the owner or operator fails to provide alternate financial assurance as specified in this rule and obtain the written approval of such alternate assurance from the Department within 90 days after receipt of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of the owner or operator.

340-108-220 Except for the specific disposal facility requirements of rule 340-108-210, an owner or operator may satisfy the requirements of that rule by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in rule 340-108-210(1), (2), (4) and (5), respectively, except that it is the combination of mechanisms, rather than a single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms; or a single standby trust may be established for two or more mechanisms. The Department may draw upon any or all of the mechanisms to provide for closure of the facility.

340-108-230 An owner or operator may use a financial assurance mechanism specified in rule 340-108-210 to meet the closure financial requirements for more than one facility. Evidence of financial assurance submitted to the Department must include a list showing, for each

facility: EPA Identification Number, name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the Department may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

340-108-240 Within 60 days after receiving certification from the owner or operator and an independent registered professional engineer that closure has been accomplished in accordance with the closure plan, the Department will notify the owner or operator in writing that he is no longer required to maintain financial assurance for closure of the particular facility, unless the Department has reason to believe that closure has not been in accordance with the closure plan.

Post-Closure, Technical

340-108-300 (1) An owner or operator shall continue post-closure care for 30 years after the date of completing closure and consisting of at least the following:

(a) Monitoring and reporting in accordance with the requirements of Divisions 107 and 113 to 116;

(b) Maintenance and monitoring of waste containment systems in accordance with the requirements of Divisions 107 and 113 to 116;

(c) Continuation of any of the security requirements of rule 340-106-200 during part or all of the post-closure period after the date of completing closure when:

(A) Wastes remain exposed; or

(B) Access by the public or domestic livestock may pose a health hazard; and

(d) Providing any remedial action necessary to protect public health and the environment.

(2) During the 180-day period preceding closure (see rule 340-108-120) or at any time thereafter, the Department may reduce the post-closure care period to less than 30 years if it finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or groundwater monitoring results, characteristics of the waste, application of advanced technology, or alternative treatment or disposal techniques indicate that the facility is secure).

(3) Prior to the time that the post-closure care period is due to expire, the Department may extend the post-closure care period if it finds that the extended period is necessary to protect human health and the environment (e.g., leachate or groundwater monitoring results indicate a potential for migration of waste at levels which may be harmful to human health or the environment).

340-108-310 (1) An owner or operator shall have a written post-closure plan which must be approved by the Department at the time the facility is approved or licensed. A copy of the approved plan and all revisions to the plan must be kept at the facility until the post-closure care period begins. This plan must identify the activities which will be carried on after closure and the frequency of these activities, and, at a minimum, include:

(a) A description of the planned monitoring activities and frequencies at which they will be performed to comply with Divisions 107 and 113 to 116; during the post-closure care period;

(b) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:

(A) The integrity of the cap and final cover or other containment structures in accordance with the requirements of Divisions 113 to 116; and

(B) The function of the facility monitoring equipment in accordance with the requirements of Divisions 107 and 113 to 116; and

(c) The name, address, and phone number of the person or office to contact about the facility during the post-closure care period. This person or office must keep an updated post-closure plan during the post-closure care period.

(2) An owner or operator may amend the post-closure plan at any time during the active life of the facility or during the post-closure care period; but must amend the plan whenever changes in operating plans or

facility design, or events which occur during the active life of the facility or during the post-closure period, affect the post-closure plan. The plan must also be amended whenever there is a change in the expected year of closure.

340-108-320 Post-closure use of property on or in which hazardous wastes remain after closure must:

(1) Be in accordance with the post-closure plan during the time the plan is in effect; and

(2) Never be allowed to disturb the integrity of the final cover, liners, or any other components of the containment system, or the functioning of the monitoring systems, unless the Department finds that the disturbance:

(a) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

(b) Is necessary to reduce a threat to human health or the environment.

Post-Closure, Financial

340-108-400 An owner or operator shall prepare a written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the post-closure plan as specified by rule 340-108-310. The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under rule 340-108-300.

(1) During the operating life of the facility, the post-closure cost estimate must be adjusted for inflation within 30 days after each anniversary of the date on which the first post-closure cost estimate was prepared. The adjustment must be made using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor is calculated by dividing the latest published annual Deflator by the Deflator for the previous year.

(a) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

(b) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

(2) The post-closure cost estimate must be revised during the operating life of the facility whenever a change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified by section (1) of this rule.

(3) An owner or operator shall keep the latest adjusted post-closure cost estimate at the facility during its operating life.

340-108-410 An owner or operator shall establish financial assurance for post-closure care of the facility in accordance with section (1) of this rule. During the period the current post-closure cost estimate (CE) exceeds the current value of the trust fund (CV), the owner or operator must also establish supplemental financial assurance in the amount CE-CV by choosing one of the options specified in sections (2) to (6) of this rule.

(1) An owner or operator shall establish a post-closure trust fund which conforms to the requirements of this part and submit an

originally signed duplicate of the trust agreement to the Department. An owner or operator of a new facility must submit the originally signed duplicate of the trust agreement at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The trustee must be a entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or State agency.

(a) The wording of the trust agreement must be identical to the wording specified in Appendix 108.1, and must be accompanied by a formal certification of acknowledgement such as in Appendix 108.2. Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.

(b) Payments into the trust fund must be made annually by the owner or operator over a term of ten years or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments to the post-closure trust fund must be made as follows:

(A) For a new facility, the first payment must be made before the initial receipt of hazardous waste for disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Department before this initial receipt of hazardous waste. The first payment must be at least equal to the current post-closure cost estimate, except as provided in rule 340-108-420, divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by the formula:

$$\text{Next payment} = \frac{\text{CE} - \text{CV}}{\text{Y}}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(B) If an owner or operator has an established trust fund but its value is less than the current post-closure cost estimate when a license is awarded for the facility, the amount of the current post-closure cost estimate still to be paid into the trust fund must be paid in over the pay-in period as defined in this paragraph. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made to the fund. The amount of each payment must be determined by this formula:

$$\text{Next payment} = \frac{\text{CE} - \text{CV}}{\text{Y}}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(c) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, the value of the fund must be maintained at no less than the value the fund would have if annual payments were made as specified in subsection (b) of this section.

(d) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this rule,

his first payment shall be at least the amount that the fund would have contained if the trust fund were established initially and annual payments made according to paragraph (b)(A) of this section.

(e) After the pay-in period is completed, whenever the current post-closure cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days of the change in the cost estimate, shall either deposit a sufficient amount into the fund so that its value after payment at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in this rule to cover the difference.

(f) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a written request to the Department for release of the amount in excess of the current post-closure cost estimate. Within 60 days after receiving such request, the Department will send a written request to the trustee to release such funds.

(g) During the period of post-closure care, the Department may approve a release of funds if the owner or operator can demonstrate that the value of the trust fund exceeds the remaining cost of post-closure care.

(h) An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the Department. Within 60 days after receiving bills for post-closure activities, the Department will determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, will send a written request to the trustee to make reimbursements.

(i) The Department will agree to termination of the trust when the owner or operator is released from the requirements of this rule in accordance with rule 340-108-440.

(2) An owner or operator may satisfy the supplemental assurance requirements of this rule by obtaining a surety bond guaranteeing payment into a post-closure trust fund which conforms to the requirements of this part and submitting the bond to the Department. An owner or operator of a new facility shall submit the surety bond at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. Department of the Treasury.

(a) The wording of the surety bond must be identical to the wording specified in Appendix 108.3.

(b) The owner or operator shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Department. This standby trust fund must meet the requirements specified in section (1) of this rule, except that:

(A) An originally signed duplicate of the trust agreement must be submitted to the Department with the surety bond; and

(B) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(i) Payments into the trust fund as specified in section (1) of this rule;

(ii) Updating of Schedule A of the trust agreement (Appendix 108.1) to show current post-closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(c) The bond must guarantee that the owner or operator will:

(A) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(B) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin closure is issued by the Department or by a court of competent jurisdiction; or

(C) Provide alternate financial assurance as specified in this rule, and obtain the Department's written approval of such assurance, within 90 days after receipt of a notice of cancellation of the bond from the surety.

(d) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(e) The penal sum of the bond must be at least equal to the amount of the current post-closure cost estimate, except as provided in rule 340-108-420.

(f) Whenever the current post-closure cost estimate increases to an amount greater than the amount of the penal sum, the owner or operator, within 60 days after the increase, shall either increase the penal sum of the bond to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate upon written approval by the Department.

(g) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, within the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

(h) The owner or operator may cancel the bond if the Department has given prior written consent based on receipt of evidence of alternate financial assurance as specified in this rule.

(3) An owner or operator may satisfy the supplemental assurance requirements of this rule by obtaining a surety bond guaranteeing performance of post-closure care which conforms to the requirements of this part and submitting the bond to the Department. An owner or operator of a new facility shall submit the bond at least 60 days before the date on which hazardous waste is first received for disposal and it must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. Department of the Treasury.

(a) The wording of the surety bond must be identical to the wording specified in Appendix 108.4.

(b) The owner or operator shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Department. This standby trust fund must meet the requirements specified in section (1) of this rule, except that:

(A) An originally signed duplicate of the trust agreement must be submitted to the Department with the surety bond; and

(B) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(i) Payments into the trust fund as specified in section (1) of this rule;

(ii) Updating of Schedule A of the trust agreement (Appendix 108.1) to show current post-closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(c) The bond must guarantee that the owner or operator will:

(A) Perform post-closure care in accordance with the post-closure care plan and other license requirements whenever required to do so; or

(B) Provide alternate financial assurance as specified in this rule, and obtain the Department's written approval of such assurance, within 90 days after receipt of a notice of cancellation of the bond from the surety.

(d) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the Department that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other license requirements, under the terms of the bond the surety will perform post-closure care in accordance with the post-closure plan and other license requirements or will deposit the amount of the penal sum into the standby trust fund.

(e) The penal sum of the bond must be at least equal to the amount of the current post-closure cost estimate.

(f) Whenever the current post-closure cost estimate increases to an amount greater than the amount of the penal sum of the bond, the owner or operator, within 60 days after the increase, shall either increase the penal sum of the bond to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate upon written approval by the Department.

(g) During the period of post-closure care, the Department may approve a decrease in the penal sum if the owner or operator can demonstrate that the amount exceeds the remaining cost of post-closure care.

(h) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, within the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

(i) The owner or operator may cancel the bond if the Department has given prior written consent. Such written consent will be provided when:

(A) An owner or operator substitutes alternate financial assurance as specified in this rule, or

(B) The Department releases the owner or operator from the requirements of this section in accordance with rule 340-108-440.

(j) The surety will not be liable for deficiencies in the performance of post-closure care by the owner or operator after the Department releases the owner or operator from the requirements of this section in accordance

with rule 340-108-440.

(4) An owner or operator may satisfy the supplemental assurance requirements of this rule by obtaining an irrevocable standby letter of credit which conforms to the requirements of this part and submitting the letter to the Department. An owner or operator of a new facility shall submit the letter of credit at least 60 days before the date on which hazardous waste is first received for disposal and it must be effective before the initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(a) The wording of the letter of credit must be identical to the wording specified in Appendix 108.5.

(b) The owner or operator shall also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid thereunder will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Department. The standby trust fund must meet the requirements of the trust fund specified in section (1) of this rule, except that:

(A) An originally signed duplicate of the trust agreement must be submitted to the Department with the letter of credit; and

(B) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(i) Payments into the trust fund as specified in section (1) of this rule;

(ii) Updating of Schedule A of the trust agreement (Appendix 108.1) to show current post-closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(c) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: EPA identification number, name, and address of the facility, and the amount of funds assured for post-closure of the facility by the letter of credit.

(d) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Department by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120-day period will begin on the date when both the owner or operator and the Department have received the notice, as evidenced on the return receipts.

(e) The letter of credit must be issued in an amount at least equal to the current post-closure cost estimate, except as provided in rule 340-108-420.

(f) Whenever the current post-closure cost estimate increases to an amount greater than the amount of credit, the owner or operator, within 60 days after the increase, shall either increase the amount of credit to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Department or obtain other financial assurance as specified in this rule to cover the increase. Whenever the adjusted post-closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current post-closure cost estimate upon

written approval by the Department.

(g) During the period of post-closure care, the Department may approve a decrease in the amount of the letter of credit if the owner or operator can demonstrate that the amount exceeds the remaining cost of post-closure care.

(h) Following a determination by the Department that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan or other license requirements, the Department may draw on the letter of credit.

(i) If the owner or operator does not establish and obtain the Department's written approval of alternate financial assurance as specified in this rule within 90 days after receipt of a notice from issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Department will draw on the letter of credit. The Department may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension, the Department will draw on the letter of credit if the owner or operator has still failed to provide approved alterante financial assurance.

(j) The Department will return the letter of credit to the issuing institution for termination when:

(A) An owner or operator substitutes alternate financial assurance as specified in this rule; or

(B) The Department releases the owner or operator from the requirements of this rule in accordance with rule 340-108-440.

(5) An owner or operator may satisfy the supplemental assurance requirements of this rule by obtaining post-closure insurance which conforms to the requirements of this part and submitting a certificate of such insurance to the Department. An owner or operator of a new facility must submit the certificate of insurance at least 60 days before the date on which hazardous waste is first received for disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

(a) The wording of the certificate of insurance must be identical to the wording specified in Appendix 108.6.

(b) The post-closure insurance policy must be issued for a face amount at least equal to the current post-closure cost estimate, except as provided in rule 340-108-420. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(c) The post-closure insurance policy must guarantee that funds will be available to provide post-closure care whenever the post-closure period begins. The policy must also guarantee that once post-closure care begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Department, to such party or parties as the Department may specify.

(d) An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the Department. Within 60 days after receiving bills for post-closure activities, the Department will determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, will send a written request

to the insurer to make reimbursements.

(e) The owner or operator shall maintain the policy in full force and effect until the Department consents to termination of the policy by the owner or operator as specified in subsection (i) of this section. Failure to pay the premium, without substitution of alternate financial assurance as specified in this rule, constitutes a violation of these rules. Such violation will be deemed to begin upon receipt by the Department of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium.

(f) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and to the Department.

Cancellation, termination, or failure to renew may not occur, however, within 120 days beginning with the date of receipt of the notice by both the Department and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(A) The Department deems the facility abandoned; or

(B) The license is terminated or revoked or a new license is denied;

or

(C) Closure is ordered by the Department or a court of competent jurisdiction; or

(D) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(E) The premium due is paid.

(g) Whenever the current post-closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, shall either increase the face amount to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current post-closure cost estimate decreases, the face amount may be reduced to the amount of the current post-closure cost estimate upon written approval by the Department.

(h) Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will annually increase the face amount of the policy in an amount equivalent to the face amount of the policy, less any payments made, multiplied by 85% of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for 26-week Treasury securities.

(i) The Department will give written consent to the owner or operator to terminate the insurance policy when:

(A) He substitutes alternate financial assurance as specified in this rule, or

(B) The Department releases the owner or operator from the requirements of this rule in accordance with rule 340-108-440.

(6) An owner or operator may satisfy the supplemental assurance requirements of this rule by passing a financial test which conforms to the requirements of this section and submitting evidence of such passage to the Department.

(a) Passing the financial test consists of meeting the criteria of either paragraph (A) or (B) of this section:

(A) The owner or operator must have:

(i) Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; or a ratio of current assets to current liabilities greater than 1.5;

(ii) Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates;

(iii) Tangible net worth of at least \$10 million; and

(iv) Assets in the United States amounting to at least 90% of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

(B) The owner or operator must have:

(i) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Bbb as issued by Moody's;

- (ii) Tangible net worth at least six times the sum of the current closure and post-closure cost estimates;
- (iii) Tangible net worth of at least \$10 million; and
- (iv) Assets in the United States amounting to at least 90% of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

NOTE: The phrase "current closure and post-closure cost estimates" refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner or operator's chief financial officer (Appendix 108.7).

(b) The owner or operator shall demonstrate that he passes the financial test by submitting the following items to the Department at least 60 days before the date on which hazardous waste is first received for disposal. The items must be updated within 90 days after the close of each succeeding fiscal year:

(A) A letter signed by the owner or operator's chief financial officer and worded as specified in Appendix 108.7;

(B) A copy of the independent certified public accountant's report on examination of the owner or operator's financial statements for the latest completed fiscal year; and

(C) A special report from the owner or operator's independent certified public accountant to the owner or operator stating that:

(i) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(ii) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(c) If the owner or operator no longer meets the requirements of this section, he must send notice to the Department of intent to establish alternate financial assurance as specified in this rule. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator shall provide the alternate financial assurance within 120 days after the end of such fiscal year.

(d) The Department may, based on a reasonable belief that the owner or operator no longer meets the requirements of subsection (a) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in subsection (b) of this section. If the Department finds, on the basis of such reports or other information, that the owner or operator no longer meets such requirements, the owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of such a finding.

(e) The Department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner or operator's financial statements. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Department will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this rule within 30 days after notification of the disallowance.

(f) During the period of post-closure care, the Department may approve

a decrease in the current post-closure care estimate for which this test demonstrates financial assurance if the owner or operator can demonstrate that the amount exceeds the remaining cost of post-closure care.

(g) The owner or operator is no longer required to submit the items specified in subsection (b) of this section when:

(A) An owner or operator substitutes alternate financial assurance as specified in this rule; or

(B) The Department releases the owner or operator from the requirements of this section in accordance with rule 340-108-440.

(h) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator, must meet the requirements for owners or operators in this part, and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in Appendix 108.9 and accompany the items sent to the Department as specified in subsection (b) of this section. The terms of the corporate guarantee must provide that:

(A) If the owner or operator fails to perform post-closure care of a facility covered by the corporate guarantee in accordance with the post-closure plan and other license requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in section (1) of this rule in the name of the owner or operator.

(B) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, within 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

(C) If the owner or operator fails to provide alternate financial assurance as specified in this rule and obtain the written approval of such alternate assurance from the Department within 90 days after receipt of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of the owner or operator.

340-108-420 An owner or operator may satisfy the supplemental financial assurance requirements of rule 340-108-410 by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in rule 340-108-410(1), (2), (4) and (5), respectively, except that it is the combination of mechanisms, rather than a single mechanism, which must provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms; or a single standby trust may be established for two or more mechanisms. The Department may draw upon any or all of the mechanisms to provide for post-closure care of the facility.

340-108-430 An owner or operator may use a financial assurance mechanism specified in rule 340-108-410 to meet the post-closure financial assurance requirements for more than one facility. Evidence of financial assurance submitted to the Department must include a list showing, for each facility: EPA Identification Number, name, address, and the amount of

funds for post-closure care assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the mechanism, the Department may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

340-108-440 When the owner or operator has completed, to the satisfaction of the Department, all post-closure care requirements in accordance with the post-closure plan, the Department will notify the owner or operator in writing that he is no longer required to maintain financial assurance for post-closure care of the particular facility.

340-108-450 An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism and the requirements of both rules 340-108-210 and -410. The amount of funds available under the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and of post-closure care.

Liability Requirements

340-108-500 An owner or operator of a hazardous waste treatment, storage, or disposal facility, or group of such facilities, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for sudden accidental occurrences in an amount to be determined by the Department but to total at least \$1 million per occurrence with an annual aggregate of at least \$2 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in sections (1) to (3) of this rule.

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified by this part.

(a) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in Appendix 108.10 and that of the certificate of insurance identical to the wording specified in Appendix 108.11. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the Department. If requested by the Department, the owner or operator shall also provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Department at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

(b) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

(2) An owner or operator may meet the requirements of this section by passing a financial test for liability coverage as specified by rule 340-108-520.

(3) An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this rule. The amounts of coverage demonstrated must total at least the minimum amounts required by this rule.

340-108-510 An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for nonsudden accidental occurrences in an amount to be determined by the Department but to total at least \$3 million per occurrence with an annual aggregate of at least \$6 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in sections (1) to (3) of this rule:

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified by this part.

(a) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in Appendix 108.10 and that of the certificate of insurance identical to the wording specified in Appendix 108.11. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the Department. If requested by the Department, the owner or operator shall also provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Department at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

(b) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

(2) An owner or operator may meet the requirements of this section by passing a financial test for liability coverage as specified by rule 340-108-520.

(3) An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this rule. The amounts of coverage demonstrated must total at least the minimum amounts required by this rule.

340-108-520 (1) An owner or operator may satisfy the requirements of rules 340-108-500 and -510 by passing a financial test which conforms to the requirements of this part and submitting evidence of such passage to the Department. Passing the financial test consists of meeting the criteria of either subsections (a) or (b) of this section:

(a) The owner or operator must have:
(A) Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test;
(B) Tangible net worth of at least \$10 million; and
(C) Assets in the United States amounting to at least 90% of his total assets or at least six times the amount of liability coverage to be demonstrated by this test.

(b) The owner or operator must have:
(A) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Bbb as issued by Moody's; and
(B) Tangible net worth of at least \$10 million; and
(C) Tangible net worth at least six times the amount of liability of coverage to be demonstrated by this test; and
(D) Assets in the United States amounting to at least 90% of his total assets or at least six times the amount of liability coverage to be demonstrated by this test.

NOTE: The phrase "amount of liability coverage" refers to the annual aggregate amounts for which coverage is required under rules 340-108-500 and -510.

(2) The owner or operator shall demonstrate that he passes the financial test by submitting the following items to the Department at least 60 days before the date on which hazardous waste is first received for treatment, storage, disposal. The items must be updated within 90 days after the close of each succeeding fiscal year:

(a) A letter signed by the owner or operator's chief financial officer and worded as specified in Appendix 108.8. If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by rules 340-108-210(6) and -410(6), and liability coverage, he may submit the letter specified in Appendix 108.8 to cover both forms of financial responsibility; a separate letter as specified in Appendix 108.7 is not required;

(b) A copy of the independent certified public accountant's report on examination of the owner or operator's financial statements for the latest completed fiscal year; and

(c) A special report from the owner or operator's independent certified public accountant to the owner or operator stating that:

(A) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(B) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(3) If the owner or operator no longer meets the requirements of this rule, he must obtain insurance for the entire amount of required liability coverage as specified in rules 340-108-500 and -510. Evidence of insurance must be submitted to the Department within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

(4) The Department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner or operator's financial statements. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Department will evaluate other qualifications on an individual basis. The owner or operator shall provide evidence of insurance for the entire amount of required liability coverage as specified in this section within 30 days after notification of the disallowance.

340-108-530 If an owner or operator can demonstrate to the satisfaction of the Department that the levels of financial responsibility required by rules 340-108-500 and -510 are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the Department. The request for a variance must be submitted to the Department as part of the application for a facility license, or as a license modification for a facility that has a license. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the Department's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Department may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary to determine a level of financial responsibility other than that required by these rules.

340-108-540 The levels of financial responsibility required by rules 340-108-500 and -510 will be based on the Department's determination as to what is necessary to protect human health, welfare, safety and the environment considering the degree and duration of risk associated with the treatment, storage, or disposal at the facility or group of facilities. In addition, if the Department determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill, or land treatment facility, it may require that an owner or operator of the facility comply with rule 340-108-510. An owner or operator must furnish to the Department, within a reasonable time, any information which the Department requests to determine whether cause exists for such adjustments of level or type of coverage.

340-108-550 An owner or operator shall continuously provide liability coverage for a facility until certification of closure of the facility, as specified by rule 340-108-140, are received by the Department.

Other Financial Requirements

340-108-600 (1) An owner or operator shall notify the Department by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in rules 340-108-210(6) and -410(6) shall make such a notification if he is named as debtor, as required under the terms of the corporate guarantee (Appendix 108.9).

(2) An owner or operator who fulfills the requirements of rules 340-108-210, -410, -500 or -510 by obtaining a trust fund, surety bond, letter

of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee to act as trustee, or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator shall establish other financial assurance or liability coverage within 60 days after such an event.

Appendix 108.1: Trust Agreement

Trust Agreement, the "Agreement," entered into as of (date) by and between (name of the owner or operator), a (name of State)(insert "corporation," "partnership," "association," "proprietorship"), the "Grantor," and (name of corporate trustee), (insert "incorporated in the State of _____" or "a national bank"), the "Trustee".

Whereas, the Oregon Department of Environmental Quality "DEQ," an agency of the State of Oregon, has established certain regulations applicable to the Grantor, requiring that the owner or operator of a hazardous waste management facility shall provide assurance that funds will be available when needed for closure and/or post-closure care of the facility,

Whereas, the Grantor has elected to establish a trust to provide such financial assurance for the facilities identified herein,

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities and Cost Estimates. This Agreement pertains to the facilities and cost estimates identified on attached Schedule A (on Schedule A, for each facility list the EPA Identification Number, name, and address, and the adjusted closure and/or post-closure cost estimates, or portions thereof, for which financial assurance is demonstrated by this Agreement.)

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of the DEQ. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by DEQ.

Section 4. Payment for Closure and Post-Closure Care. The Trustee shall make such payments from the Fund as the DEQ shall direct, in writing, to provide for the payment of the costs of closure and/or post-closure care of the facilities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the DEQ from the Fund for closure and post-closure expenditures in such amounts as the DEQ shall direct, in writing. In addition, the Trustee shall refund to the Grantor such amounts as the DEQ specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the

Trustee.

Section 6. Trustee Management. The Trustee will invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 USC 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 USC 80a-1 et seq., or one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee will be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of

such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the DEQ a statement confirming the value of the Trust. Any securities in the Fund will be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the DEQ shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing to the Grantor, the DEQ, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests and

instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests and instructions. All orders, requests, and instructions by the DEQ to the Trustee shall be in writing, signed by the Director of the DEQ or his designee, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the DEQ hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests and instructions from the Grantor and/or the DEQ, except as provided for herein.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the DEQ, by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Director of the DEQ, or by the Trustee and the Director of the DEQ if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Director of the DEQ, or by the Trustee and the Director of the DEQ if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the DEQ issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed and enforced according to the laws of the State of (name of State).

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written: The parties below certify that the wording of this Agreement is identical to the wording specified in Appendix 108.1 to OAR Chapter 340, Division 108 as such regulations were constituted on the date first above written.

(Signature of Grantor)
(Title)

Attest:
(Title)
(Seal)
(Signature of Trustee)

Attest:
(Title)
(Seal)

Appendix 108.2: Certification of Acknowledgement

State of _____
County of _____

On this (date), before me personally came (owner or operator) to me known, who, being by me duly sworn, did depose and say that she/he resides at (address), that she/he is (title) of (corporation), the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

(Signature of Notary Public)

Appendix 108.3: Financial Guarantee Bond

Date bond executed: _____
Effective date: _____
Principal: (legal name and business address of owner or operator)
Type of organization: (insert "individual," "joint venture,"
"partnership," or "corporation")
State of incorporation: _____
Surety(ies): (name(s) and business address(es))
EPA Identification Number, name, and address, and closure and/or post-
closure amount(s) for each facility guaranteed by this bond (indicate
closure and post-closure amounts separately): _____
Total penal sum of bond: \$ _____
Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the Oregon Department of Environmental Quality (hereinafter called DEQ), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under the laws of the State of Oregon to have a license in order to own or operate each hazardous waste management facility identified above, and

Whereas said Principal is required to provide financial assurance for closure, or closure and post-closure care, as a condition of the license, and

Whereas said Principal shall establish a standby trust fund as required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of final closure for each facility identified above, fund the standby trust fund in the amount(s) identified above for the facility,

Or, if the Principal shall fund the standby trust fund in such amount(s) within 15 days after an order to begin closure is issued by the DEQ or by a U.S. district court or other court of competent jurisdiction,

Or, if the Principal shall provide alternate financial assurance, as specified in OAR Chapter 340, Division 108, as applicable, and obtain the DEQ's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the DEQ from the Surety(ies), then this obligation will be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the DEQ that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the DEQ.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending written notice of cancellation by certified mail to the Principal and to the DEQ, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the DEQ as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the DEQ.

(The following paragraph is an optional rider that may be included but is not required.)

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission by the DEQ.

In Witness Whereof, the Principal and Surety(ies) have executed this Financial Guarantee Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Appendix 108.3 to OAR Chapter 340, Division 108 as such regulations were constituted on the date this bond was executed.

Principal

[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

Corporate Surety(ies)

[Name and address]
State of incorporation: _____
Liability limit: \$ _____
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: \$ _____

Appendix 108.4: Performance Bond

Date bond executed: _____
Effective date: _____
Principal: (legal name and business address of owner or operator)
Type of organization: (insert "individual," "joint venture,"
"partnership," or "corporation")
State of incorporation: _____
Surety(ies): [name(s) and business address(es)]
EPA Identification Number, name, address, and closure and post-closure
amount(s) for each facility guaranteed by this bond [indicate closure and
post-closure amounts separately]: _____
Total penal sum of bond: \$ _____
Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the Department of Environmental Quality (hereinafter called DEQ), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under the laws of the State of Oregon, to have a license in order to own or operate each hazardous waste management facility identified above, and

Whereas said Principal is required to provide financial assurance for closure, or closure and post-closure care, as a condition of the license, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of the obligation are such that if the Principal shall faithfully perform closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the license as such plan and license may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

And, if the Principal shall faithfully perform post-closure care of each facility for which this bond guarantees post-closure care, in accordance with the post-closure care plan and other requirements of the license as such plan and license may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

Or, if the Principal shall provide alternate financial assurance as specified in OAR Chapter 340, Division 108, and obtain the DEQ's approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the DEQ from the Surety(ies), then this obligation will be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the DEQ that the Principal has been found in violation of the closure requirements of OAR Chapter 340, Division 108, for a facility for which this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other license requirements or place the closure amount guaranteed for the facility in the standby trust fund as directed by the DEQ.

Upon notification by the DEQ that the Principal has been found in violation of the post-closure care requirements of OAR Chapter 340, Division 108, for a facility for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure care plan and other license requirements or place the post-closure care amount guaranteed for the facility in the standby trust fund as directed by the DEQ.

Upon notification by the DEQ that the Principal has failed to provide alternate financial assurance as specified in OAR Chapter 340, Division 108, and obtain written approval of such assurance from the DEQ during the 90 days following receipt by both the Principal and the DEQ of a notice of cancellation of the bond, the Surety(ies), shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the DEQ.

The Surety(ies) hereby waive(s) notification of amendments to the closure plans, permits, applicable laws, statutes, rules and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the DEQ, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the DEQ, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the DEQ.

(The following paragraph is an optional rider that may be included but is not required.)

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission by the DEQ.

In Witness Whereof, The Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Appendix 108.4 to OAR Chapter 340, Division 108 as such regulation was constituted on the date this bond was executed.

Principal

[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

Corporate Surety(ies)

[Name and address]
State of incorporation: _____
Liability limit: \$ _____
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: \$ _____

Appendix 108.5: Irrevocable Standby Letter of Credit

Director,
Department of Environmental Quality

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor, at the request and for the account of (owner's or operator's name and address) up to the aggregate amount of (in words) U.S. dollars \$____, available upon presentation by you or your designee of

(1) your sight draft, bearing reference to this letter of credit No. _____, and

(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under the laws of the State of Oregon."

This letter of credit is effective as of (date) and shall expire on (date at least 1 year later), but such expiration date shall be automatically extended for a period of (at least one year) on (date) and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify both you and (owner or operator's name) by certified mail that we decide not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by both you and (owner's or operator's name), as shown on the signed return receipts.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft promptly and directly into the standby trust fund of (owner's or operator's name) in accordance with your instructions.

We hereby certify that the wording of this letter of credit is identical to the wording specified in Appendix 108.5 to OAR Chapter 340, Division 108 as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution][Date]

This credit is subject to (insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce", or "the Uniform Commercial Code").

Appendix 108.6: Certificate of Insurance for Closure or Post-Closure Care

Name and Address of Insurer (herein called the "Insurer"): _____
Name and Address of Insured (herein called the "Insured"): _____
Facilities Covered: [List for each facility: The EPA Identification
Number, name, address, and the amount of insurance for closure and/or the
amount for post-closure care (these amounts for all facilities covered
must total the face amount shown below).]
Face Amount: _____
Policy Number: _____
Effective Date: _____

The Insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for (insert "closure" or "closure and post-closure care" or "post-closure care") for the facilities identified above. The Insurer further warrants that such policy conforms in all respects with the requirements of OAR Chapter 340, Division 108 as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the DEQ, the Insurer agrees to furnish to the DEQ a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in Appendix 108.6 to OAR Chapter 340, Division 108 as such regulations were constituted on the date shown immediately below.

[Authorized signature for Insurer]
[Name of person signing]
[Title of person signing]
Signature of witness or notary: _____
[Date]

Appendix 108.7: Letter From Chief Financial Officer (to demonstrate financial capability)

Director,
Department of Environmental Quality

I am the chief financial officer of (name and address of firm). This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in OAR Chapter 340, Division 108.

[Fill out the following four paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.]

1. This firm is the owner or operator of the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in OAR Chapter 340, Division 108. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: _____

2. This firm guarantees, through the corporate guarantee specified in OAR Chapter 340, Division 108, the closure or post-closure care of the following facilities owned or operated by subsidiaries of this firm. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: _____

3. This firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in OAR Chapter 340, Division 108. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility: _____

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated to the State through the financial test or any other financial assurance mechanism specified in OAR Chapter 340, Division 108. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility: _____

This firm (insert "is required" or "is not required") to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on (month, day). The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended (date).

[Fill in Alternative I if the criteria of rules 340-108-210(6)(a)(A) or -410(6)(a)(A) are used. Fill in Alternative II if the criteria of rules 340-108-210(6)(a)(B) or -410(6)(a)(B) are used.]

ALTERNATIVE I

- 1. Sum of current closure and post-closure cost estimates (total of all cost estimates shown in the four paragraphs above) \$ _____
- *2. Total liabilities (if any portion of the closure or post-closure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4) _____
- *3. Tangible net worth _____
- *4. Net worth _____
- *5. Current assets _____
- *6. Current liabilities _____
- 7. Net working capital (line 5 minus line 6) _____
- *8. The sum of net income plus depreciation, depletion and amortization _____
- *9. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) _____

Yes No

- 10. Is line 3 at least \$10 million?
- 11. Is line 3 at least 6 times line 1?
- 12. Is line 7 at least 6 times line 1?
- *13. Are at least 90% of firm's assets located in the U.S.? If not, complete line 14
- 14. Is line 9 at least 6 times line 1?
- 15. Is line 2 divided by line 4 less than 2.0?
- 16. Is line 8 divided by line 2 greater than 0.1?
- 17. Is line 5 divided by line 6 greater than 1.5?

ALTERNATIVE II

- 1. Sum of current closure and post-closure cost estimates (total of all cost estimates shown in the four paragraphs above) \$ _____
- 2. Current bond rating of most recent issuance of this firm and name of rating service _____
- 3. Date of issuance of bond _____
- 4. Date of maturity of bond _____
- *5. Total net worth (if any portion of the closure or post-closure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line) _____
- *6. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) _____

Yes No

- 7. Is line 5 at least \$10 million?
- 8. Is line 5 at least 6 times line 1?
- *9. Are at least 90% of firm's assets located in the U.S.? If not, complete line 10
- 10. Is line 6 at least 6 times line 1?

I hereby certify that the wording of this certificate is identical to the wording specified in Appendix 108.7 to OAR Chapter 340, Division 108 as such regulations were constituted on the date shown immediately below.

[Signature]

[Name]

[Title]

[Date]

Appendix 108.8: Letter from Chief Financial Officer (to demonstrate liability coverage or to demonstrate both liability coverage and assurance of closure or post-closure care)

Director,
Department of Environmental Quality

I am the chief financial officer of (owner's or operator's name and address). This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage (insert "and closure and/or post-closure care" if applicable) as specified in OAR Chapter 340, Division 108.

[Fill out the following paragraph regarding facilities and liability coverage. For each facility, include its EPA Identification Number, name, and address.]

The owner or operator identified above is the owner or operator of the following facilities for which liability coverage is being demonstrated through the financial test specified in OAR Chapter 340, Division 108:

[If you are using the financial test to demonstrate coverage of both liability and closure and post-closure care, fill in the following four paragraphs regarding facilities and associated closure and post-closure cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.]

1. The owner or operator identified above owns or operates the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in OAR Chapter 340, Division 108. The current closure and/or post-closure cost estimates covered by the test are shown for each facility:

2. The owner or operator identified above guarantees, through the corporate guarantee specified in OAR Chapter 340, Division 108, the closure or post-closure care of the following facilities owned or operated its subsidiaries. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility:

3. This owner or operator is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in OAR Chapter 340, Division 108. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility:

4. The owner or operator identified above owns or operates the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated to the State through the financial test or any other financial assurance mechanism specified in OAR Chapter 340, Division 108. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility:

This firm (insert "is required" or "is not required") to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on (month, day). The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended (date).
 [Fill in Part A if you are using the financial test to demonstrate coverage only for the liability requirements.]

Part A. Liability Coverage for Accidental Occurrences

[Fill in Alternative I if the criteria of rule 340-108-520(1)(a) are used. Fill in Alternative II if the criteria of rule 340-108-520(1)(b) are used.]

ALTERNATIVE I

- 1. Amount of annual aggregate liability coverage to be demonstrated \$ _____
 - *2. Current assets _____
 - *3. Current liabilities _____
 - 4. Net working capital (line 2 minus line 3) _____
 - *5. Tangible net worth _____
 - *6. If less than 90% of firm's assets are located in the U.S., give total U.S. assets _____
- Yes No
- 7. Is line 5 at least \$10 million?
 - 8. Is line 4 at least 6 times line 1?
 - 9. Is line 5 at least 6 times line 1?
 - *10. Are at least 90% of firm's assets located in the U.S.? If not, complete line 11
 - 11. Is line 6 at least 6 times line 1?

ALTERNATIVE II

- 1. Amount of annual aggregate liability coverage to be demonstrated \$ _____
 - 2. Current bond rating of most recent issuance of this firm and name of rating service _____
 - 3. Date of issuance of bond _____
 - 4. Date of maturity of bond _____
 - *5. Tangible net worth _____
 - *6. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) _____
- Yes No
- 7. Is line 5 at least \$10 million?
 - 8. Is line 5 at least 6 times line 1?
 - *9. Are at least 90% of firm's assets located in the U.S.? If not, complete line 10
 - 10. Is line 6 at least 6 times line 1?

[Fill in Part B if you are using the financial test to demonstrate assurance of both liability coverage and closure or post-closure care.]

Part B. Closure or Post-Closure Care and Liability Coverage

[Fill in Alternative I if the criteria of rules 340-108-210(6)(a)(A), -410(6)(a)(A), and -520(1)(a) are used. Fill in Alternative II if the criteria of rules 340-108-210(6)(a)(B), -410(6)(a)(B), and -520(1)(b) are used.]

ALTERNATIVE I

- 1. Sum of current closure and post-closure cost estimates (total of all cost estimates listed above) \$ _____
 - 2. Amount of annual aggregate liability coverage to be demonstrated _____
 - 3. Sum of lines 1 and 2 _____
 - *4. Total liabilities (if any portion of the closure or post-closure cost estimates is included in your total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 5 and 6) _____
 - *5. Tangible net worth _____
 - *6. Net worth _____
 - *7. Current assets _____
 - *8. Current liabilities _____
 - 9. Net working capital (line 7 minus line 8) _____
 - *10. The sum of net income plus depreciation, depletion and amortization _____
 - *11. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) _____
- Yes No
- 12. Is line 5 at least \$10 million?
 - 13. Is line 5 at least 6 times line 3?
 - 14. Is line 9 at least 6 times line 3?
 - *15. Are at least 90% of firm's assets located in the U.S.? If not, complete line 16
 - 16. Is line 11 at least 6 times line 3?
 - 17. Is line 4 divided by line 6 less than 2.0?
 - 18. Is line 10 divided by line 4 greater than 0.1?
 - 19. Is line 7 divided by line 8 greater than 1.5?

ALTERNATIVE II

- 1. Sum of current closure and post-closure cost estimates (total of all cost estimates listed above) \$ _____
- 2. Amount of annual aggregate liability coverage to be demonstrated _____
- 3. Sum of lines 1 and 2 _____
- 4. Current bond rating of most recent issuance of this firm and name of rating service _____
- 5. Date of issuance of bond _____
- 6. Date of maturity of bond _____

- *7. Total net worth (if any portion of the closure or post-closure cost estimates is included in "total liabilities" on your financial statements, you may add the amount of that portion to this line) _____
 - *8. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) _____
- | | | |
|--|-----|----|
| | Yes | No |
|--|-----|----|
- 9. Is line 7 at least \$10 million?
 - 10. Is line 7 at least 6 times line 3?
 - *11. Are at least 90% of firm's assets located in the U.S.? If not, complete line 12
 - 12. Is line 8 at least 6 times line 3?

I hereby certify that the wording of this certificate is identical to the wording specified in Appendix 108.8 to OAR Chapter 340, Division 108 as such regulations were constituted on the date shown immediately below.

[Signature]
 [Name]
 [Title]
 [Date]

Appendix 108.9: Corporate Guarantee for Closure or Post-Closure Care

Guarantee made this (date) by (name of guaranteeing entity), a business corporation organized under the laws of the State of (insert name of State), herein referred to as guarantor, to the Oregon Department of Environmental Quality (DEQ), obligee, on behalf of our subsidiary (owner or operator) of (business address).

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in rules 340-108-210(6) and -410(6).

2. (Owner or operator) owns or operates the following hazardous waste management facility (ies) covered by this guarantee: (List for each facility: EPA Identification Number, name, and address. Indicate for each whether guarantee is for closure, post-closure care, or both.)

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by OAR Chapter 340, Division 108 for the closure and post-closure care for facilities as identified above.

4. For value received from (owner or operator), guarantor guarantees to DEQ that in the event that (owner or operator) fails to perform (insert "closure," "post-closure care," or "closure and post-closure care") of the above facility(ies) in accordance with the closure or post-closure plans and other license requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in OAR Chapter 340, Division 108, as applicable, in the name of (owner or operator) in the amount of the current closure or post-closure cost estimates as specified in OAR Chapter 340, Division 108.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the DEQ and to (owner or operator) that he intends to provide alternate financial assurance as specified in OAR Chapter 340, Division 108, as applicable, in the name of (owner or operator). Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless (owner or operator) has done so.

6. The guarantor agrees to notify the DEQ by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by the DEQ of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure care, he shall establish alternate financial assurance as specified in OAR Chapter 340, Division 108, as applicable, in the name of (owner or operator) unless (owner or operator) has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or post-closure plan, amendment or modification of the license, the extension or reduction of the time of performance of closure or post-closure, or any other modification of alteration of an obligation of the owner or operator pursuant to OAR Chapter 340.

9. Guarantor agrees to remain bound under this guarantee for so long as (owner or operator) must comply with the applicable financial assurance requirements of OAR Chapter 340, Division 108 for the above-listed

facilities, except that guarantor may cancel this guarantee by sending notice by certified mail to the DEQ and to (owner or operator), such cancellation to become effective no earlier than 120 days after receipt of such notice by both DEQ and (owner or operator), as evidenced by the return receipts.

10. Guarantor agrees that if (owner or operator) fails to provide alternate financial assurance as specified in OAR Chapter 340, Division 108, as applicable, and obtain written approval of such assurance from the DEQ within 90 days after a notice of cancellation by the guarantor is received by the DEQ from guarantor, guarantor shall provide such alternate financial assurance in the name of (owner or operator).

11. Guarantor expressly waives notice of acceptance of this guarantee by the DEQ or by (owner or operator). Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plan and of amendments or modifications of the facility license(s).

I hereby certify that the wording of this certificate is identical to the wording specified in Appendix 108.9 to OAR Chapter 340, Division 108 as such regulations were constituted on the date shown immediately below.

Effective date: _____

[Name of guarantor]

[Authorized signature for guarantor]

[Name of person signing]

[Title of person signing]

Signature of witness or notary: _____

[Date]

Appendix 108.10: Hazardous Waste Facility Liability Endorsement

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering bodily injury and property damage in connection with the insured's obligation to demonstrate financial responsibility under rules 340-108-500 and -510. The coverage applies at (list EPA Identification Number, name, and address for each facility) for (insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences": if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both). The limits of liability are (insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability), exclusive of legal defense costs.

2. The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions of the policy inconsistent with subsections (a) through (e) of this Paragraph 2 are hereby amended to conform with subsections (a) through (e):

(a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy to which this endorsement is attached.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in rules 340-108-210(6) and -410(6).

(c) Whenever requested by the Department of Environmental Quality (DEQ), the Insurer agrees to furnish to the DEQ a signed duplicate original of the policy and all endorsements.

(d) Cancellation of this endorsement, whether by the Insurer or the insured, will be effective only upon written notice and only after the expiration of sixty (60) days after a copy of such written notice is received by the DEQ.

(e) Any other termination of this endorsement will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the DEQ.

Attached to and forming part of policy No. _____ issued by (name of Insurer), herein called the Insurer, of (address of Insurer) to (name of insured) of (address) this _____ day of _____, 19____. The effective date of said policy is _____ day of _____, 19____.

I hereby certify that the wording of this certificate is identical to the wording specified in Appendix 108.10 to OAR Chapter 340, Division 108 as such regulations was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

[Signature of Authorized Representative of Insurer]

[Type name]

[Title], Authorized Representative of [name of Insurer]

[Address of Representative]

Appendix 108.11: Hazardous Waste Facility Certificate of Liability Insurance

1. (Name of Insurer), (the "Insurer"), of (address of Insurer) hereby certifies that it has issued liability insurance covering bodily injury and property damage to (name of insured), (the "insured"), of (address of insured) in connection with the insured's obligation to demonstrate financial responsibility under rules 340-108-500 and -510. The coverage applies at (list EPA Identification Number, name, and address for each facility) for (insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences": if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both). The limits of liability are (insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability), exclusive of legal defense costs. The coverage is provided under policy number _____, issued on (date). The effective date of said policy is (date).

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:

(a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in rule 340-108-520.

(c) Whenever requested by the Department of Environmental Quality (DEQ), the Insurer agrees to furnish to the DEQ a signed duplicate original of the policy and all endorsements.

(d) Cancellation of this endorsement, whether by the Insurer or the insured, will be effective only upon written notice and only after the expiration of sixty (60) days after a copy of such written notice is received by the DEQ.

(e) Any other termination of this endorsement will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the DEQ.

I hereby certify that the wording of this certificate is identical to the wording specified in Appendix 108.11 to OAR Chapter 340, Division 108 as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

[Signature of Authorized Representative of Insurer]

[Type name]

[Title], Authorized Representative of [name of Insurer]

[Address of Representative]

DIVISION 109: Reserved

DIVISION 110: Reserved

DIVISION 111
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Container Storage

Purpose

340-111-010 The purpose of this division is to specify construction and operating standards for hazardous waste container storage facilities.

Authority

340-111-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-111-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-111-040 The rules of this division apply to owners or operators of facilities that store hazardous waste in containers except as may be exempted by rule 340-106-040.

Construction

340-111-100 An owner or operator shall design, construct and maintain the container storage facility in a manner that will prevent the contamination of surface water and groundwater.

(1) If the stored waste contains free liquid:

(a) The storage facility must have a containment system with a base underlying the containers that is sufficiently impervious to contain leaks, spills and accumulated precipitation until the collected material is detected and removed;

(b) The base must be sloped or a collection system designed (e.g., by installing a sump) to drain and remove liquids resulting from leaks, spills or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids;

(c) The containment system must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater; and

(d) Run-on into the containment system must be prevented unless the containment system has sufficient excess capacity in addition to that required by subsection (c) to contain it.

(2) If the stored waste does not contain free liquid, the storage facility need not have a containment system provided:

(a) The base is sloped or a collection system designed to drain and remove liquids resulting from leaks, spills or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids; and

(b) Run-on into the storage facility is prevented.

340-111-110 In addition to the requirements of rule 340-111-100, an owner or operator of a facility storing PCB wastes shall design and construct the facility with:

- (1) An adequate roof and walls to prevent precipitation from reaching the PCB wastes;
- (2) A containment system with sufficient capacity to contain twice the internal liquid volume of the largest PCB article or container, or 25% of the total internal liquid volume of all PCB articles or containers, whichever is greater; and
- (3) The marking M_L (Appendix 102.1) conspicuously placed so that it can be easily read by any person entering the storage area.

Operation

340-111-200 An owner or operator shall store hazardous waste in containers of good condition that are made of or lined with materials which will not react, and are otherwise compatible with, the hazardous waste being stored.

340-111-210 An owner or operator shall manage containers in a manner that will minimize the possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fires, explosion or the discharge of waste by:

- (1) Keeping containers closed during storage, except when it is necessary to add or remove waste;
- (2) Not opening, handling or storing containers in a manner which may rupture or cause them to leak;
- (3) If they leak, transferring the hazardous waste from the leaking container to one that is in good condition or managing the waste in some other manner that complies with this rule;
- (4) If they contain ignitable or reactive waste, storing them:
 - (a) Separated from each other and from other hazardous wastes;
 - (b) At least 50 feet from the site property line; and
 - (c) In accordance with local fire codes;
- (5) Not placing incompatible wastes or substances in the same container or in a container which has previously held an incompatible waste or substance, unless:
 - (a) Measures are taken to prevent or control any reaction; and
 - (b) The container is separated from other containers, piles, tanks or surface impoundments containing incompatible wastes or substances by means of a dike, berm, wall or other protective device; and
- (6) Removing spilled or leaked waste and accumulated precipitation from the containment or collection system in a timely manner to prevent overflow of the collection system or contamination of the storage facility.

NOTE: The collected material shall be tested, if necessary, and disposed in an appropriate manner.

340-111-220 An owner or operator shall inspect the storage facility at least weekly, looking for leaking and deteriorating containers and for deterioration of the containment system caused by corrosion or other factors.

340-111-230 An owner or operator storing PCB wastes shall comply with the following additional operating standards:

(1) Any PCB wastes stored for disposal shall be removed from storage for disposal as required by rule 340-101-210(2) within one year from the date it was first placed into storage;

(2) No item of movable equipment that is used for handling PCB wastes and that comes in direct contact with PCB shall be removed from the storage site until it has been decontaminated by swabbing surfaces that have contacted PCB with a solvent containing less than 50 ppm PCB;

(3) PCB wastes shall be stored in containers that meet the requirements of 49 CFR Parts 173 and 178, or in tanks that meet the requirements of 49 CFR Part 179:

(a) Larger containers may be used for non-liquid PCB wastes provided they are designed and constructed in a manner that will provide as much protection against leaking and exposure to the environment, and are of the same relative strength and durability, as the DOT specification containers; and

(b) Larger containers may be used for liquid PCB wastes provided they are designed, constructed and managed in compliance with Occupational Safety and Health Standards, 29 CFR 1910.106 (Flammable and combustible liquids). Before using these containers, their design must be reviewed to determine the effect on their structural safety from holding liquids with the specific gravity of PCBs; and

(4) Non-leaking and structurally undamaged PCB large capacitors and fluid-filled PCB-contaminated articles may be stored on pallets next to a storage facility that meets the requirements of this Division. Drained PCB-contaminated articles, other than large capacitors, are not regulated as hazardous waste. Storage under this section is permitted only when the storage facility has immediately available unfilled storage space equal to 10% of the volume of the PCB wastes stored outside the facility. The wastes stored outside the facility shall be inspected on the same schedule as is the storage facility.

Closure

340-111-300 At closure, an owner or operator shall remove or decontaminate all waste residues, containers, containment system components, and soil contaminated by hazardous waste and, to the extent reasonably practicable, restore the site to its original condition. Removed substances shall be managed in accordance with rule 340-101-030(6)(a).

DIVISION 112
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Tanks

Purpose

340-112-010 The purpose of this division is to specify construction and operating standards for hazardous waste tank facilities.

Authority

340-112-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-112-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-112-040 The rules of this division apply to owners or operators of facilities that store or treat hazardous waste in tanks except as may be exempted by rule 340-106-040.

Construction

340-112-100 An owner or operator shall design, construct and maintain tanks holding hazardous waste to have sufficient shell strength to prevent collapse or rupture. The Department may specify a minimum shell thickness to be maintained at all times to ensure the required strength. Factors to be considered in establishing the minimum thickness include the width, height, and materials of construction of the tank, and the specific gravity of the waste which will be placed in the tank.

Other important design factors include the foundation, structural support, seams, and, for closed tanks, pressure controls. The owner or operator shall rely upon appropriate industrial design standards and other available information in designing a tank.

340-112-110 An owner or operator shall design, construct, maintain and locate covered tanks holding ignitable or reactive waste in accordance with local fire codes. The minimum requirement shall be compliance with the buffer zone requirements for tanks contained in Tables 2-1 to 2-6 of Flammable and Combustible Liquids Code, National Fire Protection Association (1981).

340-112-120 Tanks installed after January 1, 1985, must have secondary containment that:

- (1) Is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;
- (2) Has sufficient capacity to hold the entire volume of the largest tank; and
- (3) Prevents run-on into the containment system unless there is

sufficient excess capacity in addition to that required by section (2) of this rule to contain it.

Operation

340-112-200 An owner or operator shall store or treat hazardous waste in a tank so as to minimize the possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fire, explosion or the discharge of waste by:

(1) Not placing waste or substances in a tank if they are incompatible with the materials of construction of the tank unless the tank is protected from chemical attack, corrosion, erosion or abrasion through the use of:

(a) An inner liner or coating which is not affected by the waste or substances and which is free from leaks, cracks, holes or other deterioration; or

(b) Alternative means of protection, such as cathodic protection or corrosion inhibitors;

(2) The use of appropriate controls and practices to prevent overfilling, such as fill gauges, waste feed cutoff or bypass systems, and, for uncovered tanks, maintenance of sufficient freeboard to prevent overtopping by wave or wind action or precipitation;

(3) Not placing ignitable or reactive waste in a tank unless:

(a) The waste is treated or mixed before or immediately after placement in the tank so that the resultant is no longer ignitable or reactive; or

(b) The waste is stored or treated in such a way that it is protected from any material or conditions which may cause it to ignite or react;

(4) Not placing incompatible wastes or substances in the same tank or in a tank which has previously held an incompatible waste or substance, unless measures are taken to prevent or control any reaction;

(5) Not storing volatile hazardous waste in an uncovered tank; and

(6) For tanks that are located in a containment system, removing spilled or leaked waste and accumulated precipitation from the containment system in a timely manner to prevent overflow of the system or contamination of the tank facility.

340-112-210 Unless otherwise approved by the Department, an owner or operator shall inspect:

(1) At least daily:

(a) The monitoring equipment (e.g., pressure and temperature gauges) to ensure that the tank is being operated according to its design;

(b) The overflow control equipment or fill gauge to ensure that the tank does not overflow; and

(c) For uncovered tanks, the level of waste in the tank to ensure compliance with rule 340-112-200(2).

(2) At least weekly:

(a) The construction of the above-ground portions of the tank to detect corrosion, erosion or leaking of fixtures and seams; and

(b) The area immediately surrounding the tank to detect obvious signs of leakage (e.g., wet spots or dead vegetation).

(3) On a schedule as required by rule 340-106-250, an inspection of the tank and its associated piping, to detect evidence of chemical attack, corrosion, erosion or abrasion, which may lead to cracks, leaks or tank wall thinning to less than the thickness determined under rule 340-112-100. When possible, this should include emptying a tank to allow entry and

inspection of its interior; however, alternative methods such as pressure testing and vapor analysis within the secondary containment or adjacent monitoring wells may also be used. The frequency of these inspections shall be based on the materials of construction of the tank, type of protection used, rate of deterioration observed during previous inspections and the characteristics of the waste being stored or treated. Any leak, crack, wall thinning, malfunctioning equipment or other hazardous condition must be repaired in accordance with rule 340-106-260.

340-112-220 As part of the contingency plan required by rule 340-106-400, an owner or operator shall specify the procedures to be used to respond to tank spills or leakage, including procedures and timing for expeditious removal of leaked or spilled waste and repair of the tank.

Closure

340-112-300 At closure, an owner or operator shall remove or decontaminate all waste residues, tanks, fill and discharge equipment, and discharge confinement structures contaminated by hazardous waste. Removed substances shall be managed in accordance with rule 340-101-030(6)(a).

DIVISION 113
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Surface Impoundments

Purpose

340-113-010 The purpose of this division is to specify construction and operating standards for hazardous waste surface impoundments.

Authority

340-113-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-113-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-113-040 The rules of this division apply to owners or operators of facilities that treat or store hazardous waste in surface impoundments except as may be exempted by rule 340-106-040.

NOTE: The Department does not consider surface impoundments to be disposal facilities.

Construction

340-113-100 An owner or operator shall design, construct and maintain the surface impoundment (except for an existing portion of a impoundment) to prevent any migration of wastes out of the impoundment at any time during the active life (including closure) of the impoundment by:

(1) Installing dikes that are designed and constructed with sufficient structural integrity to prevent massive failure. In ensuring structural integrity, it must not be presumed that the liner will function without leakage during the active life of the impoundment; and

(2) Installing a liner that is:

(a) Constructed of material that has appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which it is exposed, climatic conditions and the stress of daily operation;

(b) Placed upon a foundation or base capable of supporting it and resistant to gradients from above and below to prevent failure of the liner due to settlement, compression or uplift; and

(c) Cut to cover all surrounding earth likely to be in contact with the waste or leachate.

340-113-110 (1) During and following installation of the liner, an owner or operator shall inspect and verify that:

(a) Synthetic liners have tight seams and joints with no tears, punctures or blisters; and

(b) Soil-based and admixed liners have no imperfections such as

lenses, cracks, channels, root holes or other structural non-uniformities that may cause an increase in permeability.

(2) Following construction of the impoundment, or after any period greater than 6 months during which the impoundment was not in service, an owner or operator shall obtain certification from a qualified engineer that the impoundment's dikes, including that portion of any dike which provides freeboard, is structurally sound. In particular, the certification shall establish that the dike:

(a) Will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the impoundment; and

(b) Will not fail due to scouring or piping, without dependence on any liner included in the impoundment's construction.

340-113-150 The Department may grant an owner or operator exemption from rule 340-113-100(2) if he can demonstrate that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents from the impoundment into surface water or groundwater at any future time. This exemption will be based upon:

(1) The nature and quantity of the waste;

(2) The proposed alternate design and operation;

(3) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the impoundment and surface water or groundwater; and

(4) Any other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to surface water or groundwater.

340-113-160 An owner or operator shall be exempted from the groundwater monitoring requirements of Division 107 if the surface impoundment is:

(1) Designed and constructed:

(a) Entirely (including the liner) above the seasonal high water table;

(b) With a double liner, each of which meets the specifications of rule 340-113-100(2) and prevents the migration of liquid into or out of the space between them; and

(c) With a leak detection system between the liners to detect any migration of liquids into that space; and

(2) Monitored so that, if liquid leaks into the leak detection system, the owner or operator will:

(a) Notify the Department of the leak in writing within seven days after its detection; and

(b) Within the period of time specified in the license:

(A) Remove the accumulated liquid, repair or replace the leaking liner, and obtain a certification from a qualified engineer that, to the best of his knowledge and opinion, the leak has been stopped; or

(B) Establish a detection monitoring program and comply with all applicable requirements of Division 107.

Operation

340-113-200 An owner or operator shall manage the impoundment in a manner that will minimize the possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fire, explosion

or the discharge of waste by:

(1) Preventing overtopping that may result from normal or abnormal operations, overflowing, wind and wave action, precipitation, run-on, malfunctioning level controllers, alarms, and other equipment, and human error;

(2) Not placing ignitable or reactive waste in the impoundment unless:

(a) The waste is treated or mixed before or immediately after placement in the impoundment so that the resultant is no longer ignitable or reactive; or

(b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react;

(3) Not storing volatile hazardous wastes in the impoundment; and

(4) Not placing incompatible wastes or substances in the same impoundment unless measures are taken to prevent or control any reaction.

340-113-210 An owner or operator shall inspect the surface impoundment weekly and after storms to detect evidence of:

(1) Deterioration, malfunctions, or improper operation of overtopping control systems;

(2) Sudden drops in the waste level;

(3) The presence of liquids in leak detection systems, where installed pursuant to rule 340-113-160; and

(4) Severe erosion or other signs of deterioration in the dikes or other containment devices.

340-113-220 (1) An owner or operator shall remove a surface impoundment from service if damage is indicated by the waste level in the impoundment suddenly dropping due to unknown causes or dike leakage.

(2) When a surface impoundment is removed from service because of damage, an owner or operator shall:

(a) Immediately shut off the flow of waste into the impoundment;

(b) Immediately stop and contain any surface leakage which has occurred or is occurring;

(c) Take any steps necessary to stop or prevent catastrophic failure;

(d) If the leak cannot be stopped by any other means, empty the impoundment; and

(e) Notify the Department verbally as soon as the immediate problem has been dealt with and follow with a written report within seven days.

(3) A surface impoundment that has been removed from service because of damage may not be restored to service unless the damaged portion of the impoundment is repaired and the following steps taken:

(a) If the impoundment was removed from service because of actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with rule 340-113-110(2);

(b) If the impoundment was removed from service because of a sudden drop in waste level:

(A) A new liner must be installed in compliance with rules 340-113-100(2) or -160(1); or

(B) The existing liner must be repaired and certified to be in compliance with rules 340-113-100(2) or -160(1).

(4) A surface impoundment that has been removed from service as required by this rule but will not be repaired must be closed in accordance with rule 340-113-300.

NOTE: Specific procedures for complying with section (2) of this rule shall be incorporated into the facility's contingency plan required

by rule 340-106-400.

340-113-230 (1) Hazardous wastes F020, F021, F022 and F023 must not be placed in a surface impoundment unless the owner or operator operates the surface impoundment in accordance with a management plan for these wastes that is approved by the Department after consideration of the following factors:

(a) The volume, physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(b) The attenuative properties of underlying and surrounding soils or other materials;

(c) The mobilizing properties of other substances commingled with these wastes; and

(d) The effectiveness of additional treatment, design, or monitoring techniques.

(2) The Department may determine that additional design, operating, and monitoring requirements are necessary for surface impoundments managing hazardous wastes F020, F021, F022 and F023 in order to reduce the possibility of migration of these wastes to groundwater, surface water, or air so as to protect human health and the environment.

Closure

340-113-300 (1) Except as permitted by section (2) of this rule, an owner or operator shall close a surface impoundment by removing or decontaminating all waste residues, containment system components (liners, etc.), soil, and structures and equipment contaminated with waste and leachate, and, to the extent reasonably practicable, restoring the site to its original condition. Removed substances shall be managed in accordance with rule 340-101-030(6)(a).

(2) The Department may permit the owner or operator of a surface impoundment constructed in a licensed hazardous waste disposal site to close such facility with the wastes remaining in-place.

340-113-310 If, after removing or decontaminating all waste residues and making all reasonable efforts to remove or decontaminate contaminated containment system components, soil, structures and equipment, the owner or operator finds that he cannot comply with rule 340-113-300, he shall:

(1) Apply to the Department for a hazardous waste disposal site post-closure license;

(2) Secure the remaining waste by eliminating free liquids and stabilizing to a bearing capacity sufficient to support a final cover;

(3) Comply with the closure requirements for landfills as specified in Division 116; and

(4) Map the location and dimensions of the surface impoundment with respect to a permanently surveyed benchmark.

NOTE: For regulatory purposes, the surface impoundment is considered to be a landfill.

Post-Closure

340-113-400 If contaminated waste residues, containment system components, soils, structures or equipment remain in place after closure, an owner or operator shall comply with the post-closure requirements for landfills specified in Division 116 and the post-closure license.

DIVISION 114
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Waste Piles

Purpose

340-114-010 The purpose of this division is to specify construction and operating standards for hazardous waste pile facilities.

Authority

340-114-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-114-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-114-040 The rules of this division apply to owners or operators of facilities that store or treat hazardous waste in piles with the following exemptions:

- (1) Those listed in rule 340-106-040; and
- (2) Waste piles that are inside or under a structure that provides protection from precipitation and run-on so that neither run-off nor leachate is generated are not subject to rules 340-114-100, -200(5) and (6), and Division 107, provided that:
 - (a) Liquids or substances containing free liquids are not placed in the pile;
 - (b) The pile facility is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and
 - (c) The pile will not generate leachate through decomposition or other reactions.

NOTE: The Department does not consider waste pile facilities to be disposal facilities.

Construction

340-114-100 An owner or operator shall design, construct and maintain a waste pile facility (except for the portion containing an existing waste pile) to prevent any migration of wastes out of the facility at any time during the active life (including closure) of the waste pile, including:

- (1) A base liner:
 - (a) Constructed of material that has appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which it is exposed, climatic conditions, and the stress of daily operation;
 - (b) Placed upon a foundation or base capable of supporting it and resistant to gradients from above and below to prevent failure of the liner due to settlement, compression or uplift; and

(c) Installed to cover all surrounding earth likely to be in contact with the waste or leachate;

(2) A leachate collection and removal system installed immediately above the liner designed and constructed to collect and remove leachate from the pile. The system must be:

(a) Sized to ensure that the leachate depth over the liner does not exceed one foot;

(b) Constructed of materials that are chemically resistant to the waste managed in the pile and the leachate expected to be generated; and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, cover materials and any equipment used on the pile; and

(c) Designed to function without clogging throughout the operating life of the waste pile;

(3) A run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from a 24-hour, 25-year storm;

(4) A run-off control system to collect the water resulting from a 24-hour, 25-year storm. Any holding facilities (e.g., tanks or basins) associated with the run-off control system must be designed to be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.

340-114-110 During and following installation of the liner, an owner or operator shall inspect and verify that:

(1) Synthetic liners have tight seams and joints with no tears, punctures or blisters; and

(2) Soil-based and admixed liners have no imperfections including lenses, cracks, channels, root holes or other structural non-uniformities that may cause an increase in permeability.

340-114-150 The Department may grant an owner or operator an exemption from rules 340-114-100(1) and (2) if he can demonstrate that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents from the waste pile into surface water or groundwater at any future time. This exemption will be based upon:

(1) The nature and quantity of the wastes;

(2) The proposed alternate design and operation;

(3) The hydrogeologic setting of the waste pile, including the attenuative capacity and thickness of the liners and soils present between the pile and surface water or groundwater; and

(4) Any other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to surface water or groundwater.

340-114-160 An owner or operator shall be exempted from the groundwater monitoring requirements of Division 107 if he complies with either sections (1) or (2) of this rule:

(1) The waste pile is underlain by a single liner and is:

(a) Designed and constructed:

(A) Entirely (including the liner) above the seasonal high water table;

(B) With a liner that meets the specifications of rule 340-114-100(1), including being of sufficient strength and thickness to prevent failure due to puncture, cracking, tearing or other physical damage from equipment

used to clean and expose the liner surface for inspection; and

(C) With a leachate collection and removal system above the top liner as specified by rule 340-114-100(2); and

(b) Operated by periodically removing the waste pile and inspecting the liner for deterioration, cracks or other conditions that may result in leaks. Inspections will be scheduled as required by rule 340-106-250 and must be based on the potential for the liner to crack or otherwise deteriorate under the conditions of operation (e.g., waste type, rainfall, loading rates and subsurface stability). If deterioration, cracking or other defect is identified that is causing or could cause a leak, the owner or operator shall:

(A) Notify the Department of the defect in writing within seven days after its detection; and

(B) Within the period of time specified in the license:

(i) Remove the accumulated liquid, repair or replace the leaking liner, and obtain a certification from a qualified engineer that, to the best of his knowledge and opinion, the leak has been stopped; or

(ii) Establish a detection monitoring program and comply with all applicable requirements of Division 107.

(2) The waste pile is underlain by a double liner and is:

(a) Designed and constructed:

(A) Entirely (including the liner) above the seasonal high water table;

(B) With liners that meet the specifications of rule 340-114-100(1) and prevent the migration of liquid into or out of the space between them;

(C) With a leachate detection system between the liners to detect any migration of liquids into that space; and

(D) With a leachate collection and removal system above the top liner as specified in rule 340-114-100(2); and

(b) Monitored so that if liquid leaks into the leak detection system, the owner or operator will:

(A) Notify the Department of the leak in writing within seven days after its detection; and

(B) Within the period of time specified in the license:

(i) Remove the accumulated liquid, repair or replace the leaking liner, and obtain a certification from a qualified engineer that, to the best of his knowledge and opinion, the leak has been stopped; or

(ii) Establish a detection monitoring program and comply with all applicable requirements of Division 107.

Operation

340-114-200 An owner or operator shall manage the waste pile in a manner that will minimize the possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fire, explosion or the discharge of waste by:

(1) Not placing ignitable or reactive waste in the waste pile unless:

(a) The waste is treated or mixed before or immediately after placement in the waste pile so that the resultant is no longer ignitable or reactive; or

(b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react;

(2) Not placing incompatible wastes or substances in the same waste pile or on a base where incompatible wastes or other substances were previously piled, unless the base has been decontaminated sufficiently to

prevent any reaction;

(3) Separating a pile of hazardous waste from other incompatible wastes or substances stored nearby in containers, piles, open tanks or surface impoundments by means of a dike, berm, wall or other protective device;

(4) Not storing volatile hazardous wastes in the waste pile;

(5) After storms, emptying or otherwise expeditiously managing collection and holding facilities associated with run-off control systems to maintain design capacity of the systems; and

(6) Managing the waste pile to control wind dispersal if it contains particulate matter which may be subject to wind dispersal.

340-114-210 An owner or operator shall inspect the waste pile facility weekly and after storms to detect evidence of:

(1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems;

(2) The presence of liquids in leak detection systems, where installed pursuant to rule 340-114-160(2);

(3) Improper functioning of wind dispersal control systems, where present; and

(4) The presence of leachate and proper functioning of leachate collection and removal systems, where present.

340-114-220 (1) Hazardous wastes F020, F021, F022 and F023 must not be placed in a waste pile unless the owner or operator operates the waste pile facility in accordance with a management plan for these wastes that is approved by the Department after consideration of the following factors:

(a) The volume, physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(b) The attenuative properties of underlying and surrounding soils or other materials;

(c) The mobilizing properties of other substances commingled with these wastes; and

(d) The effectiveness of additional treatment, design, or monitoring techniques.

(2) The Department may determine that additional design, operating, and monitoring requirements are necessary for waste pile facilities managing hazardous wastes F020, F021, F022 and F023 in order to reduce the possibility of migration of these wastes to groundwater, surface water, or air so as to protect human health and the environment.

Closure

340-114-300 (1) Except as permitted by section (2) of this rule, an owner or operator shall close a waste pile facility by removing or decontaminating all waste residues, containment system components (liners, etc.), soil, and structures and equipment contaminated with waste and leachate, and, to the extent reasonably practicable, restoring the site to its original condition. Removed substances shall be managed in accordance with rule 340-101-030(6)(a).

(2) The Department may permit the owner or operator of a waste pile facility constructed in a licensed hazardous waste disposal site to close such facility with the wastes remaining in-place.

340-114-310 If, after removing or decontaminating all waste residues and making all reasonable efforts to remove or decontaminate contaminated containment system components, soil, structures and equipment, the owner or operator finds that it is not possible to comply with rule 340-114-300, he shall:

- (1) Apply to the Department for a hazardous waste disposal site post-closure license;
- (2) Secure the remaining hazardous waste by eliminating free liquids and stabilizing to a bearing capacity sufficient to support a final cover; and
- (3) Comply with the closure requirements for landfills as specified in Division 116; and
- (4) Map the location and dimensions of the waste pile with respect to a permanently surveyed benchmark.

NOTE: For regulatory purposes, the waste pile is considered to be a landfill.

Post-Closure

340-114-400 If contaminated waste residues, containment system components, soils, structures or equipment remain in place after closure, an owner or operator shall comply with the post-closure requirements for landfills specified in Division 116 and the post-closure license.

DIVISION 115
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Land Treatment

Purpose

340-115-010 The purpose of this division is to specify construction, operating, and special monitoring standards for hazardous waste land treatment facilities.

Authority

340-115-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-115-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-115-040 The rules of this division apply to owners or operators of facilities that treat hazardous waste by soil biodegradation, except as may be exempted by rule 340-106-040.

Treatment Demonstration

340-115-100 Prior to applying any waste to land, an owner or operator shall demonstrate that substantially all the hazardous constituents in the waste can be fully degraded in the treatment zone, with the residue being immobilized. This demonstration may be based on laboratory or field tests, available data, or, in the case of existing facilities, operating data.

340-115-110 An owner or operator intending to conduct tests in order to make the demonstration required by rule 340-115-100 shall obtain a treatment facility license or letter of authorization, if applicable, pursuant to Division 120. The Department will specify the tests' analytical, design, and operating requirements (including their duration, and, in the case of field tests, the horizontal and vertical dimensions of the treatment zone, monitoring procedures, closure and cleanup activities) necessary to insure that the tests:

(1) Accurately simulate the characteristics and operating conditions for the proposed land treatment including:

(a) The characteristics of the waste (including the presence of hazardous constituents);

(b) The climate in the area;

(c) The surrounding terrain;

(d) The characteristics of the soil in the treatment zone; and

(e) The operating practices to be used;

(2) Indicate whether the hazardous constituents in the waste are completely degraded or immobilized in the treatment zone; and

(3) Are conducted in a manner that protects human health and the environment considering:

- (a) The characteristics of the waste;
- (b) The operating and monitoring procedures to be used;
- (c) The duration of the tests;
- (d) The volume of waste used; and
- (e) In the case of field tests, the potential for migration of hazardous constituents to surface water or groundwater.

Construction

340-115-200 An owner or operator shall design, construct and maintain a land treatment facility to minimize the run-off of hazardous constituents during its active life (including closure), including:

- (1) A run-on control system capable of preventing flow onto the treatment zone during peak discharge from a 24-hour, 25-year storm; and
- (2) A run-off control system to collect the water resulting from a 24-hour, 25-year storm. Any holding facilities (e.g., tanks or basins) associated with the run-off control systems must be designed to be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.

Operation

340-115-300 An owner or operator shall establish an operating program designed to ensure that hazardous constituents placed on the treatment zone are degraded or immobilized within the treatment zone. The Department will approve the elements of this program, including:

- (1) The type of wastes which may be treated and the hazardous constituents in those wastes which must be degraded or immobilized. The facility's capability for treatment will be based on the demonstration made under rule 340-115-100;
- (2) The vertical and horizontal dimensions of the treatment zone. The treatment zone is to be no deeper than 5 feet from the initial soil surface or closer than 3 feet to the seasonal high water table;
- (3) The operating procedures necessary to maximize the success of the degradation and immobilization processes in the treatment zone, including:
 - (a) The rate and method of waste application;
 - (b) Measures to control soil pH;
 - (c) Measures to enhance microbial or chemical reactions (e.g., fertilization, tilling, etc.); and
 - (d) Measures to control the moisture content of the soil;
- (4) An unsaturated zone monitoring program meeting the requirements of rules 340-115-400 to -460; and
- (5) A ban on the growing of food-chain crops.

340-115-310 An owner or operator shall manage a land treatment facility in a manner that will minimize the possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fire, explosion or the discharge of waste by:

- (1) Not placing ignitable or reactive waste on the treatment zone unless:
 - (a) The waste is treated or mixed before or immediately after placement on the treatment zone so that the resultant is no longer ignitable or reactive; or
 - (b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react;

(2) Not placing incompatible wastes or substances on the same treatment zone unless measures are taken to prevent or control any reaction;

(3) Not placing volatile hazardous wastes on the treatment zone;

(4) Managing the treatment zone to control wind dispersal if it contains particulate matter which may be subject to wind dispersal; and

(5) Managing the treatment zone to control run-off of hazardous constituents.

340-115-320 An owner or operator shall inspect the facility weekly and after storms to detect evidence of:

(1) Deterioration, malfunctions or improper operation of run-on and run-off control systems; and

(2) Improper functioning of wind dispersal control systems, where present.

340-115-330 An owner or operator shall include the dates and rates of waste application and other operating details in the operating record required by rule 340-106-550.

340-115-340 (1) Hazardous wastes F020, F021, F022 and F023 must not be placed in a land treatment facility unless the owner or operator operates the facility in accordance with a management plan for these wastes that is approved by the Department after consideration of the following factors:

(a) The volume, physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(b) The attenuative properties of underlying and surrounding soils or other materials;

(c) The mobilizing properties of other substances commingled with these wastes; and

(d) The effectiveness of additional treatment, design or monitoring techniques.

(2) The Department may determine that additional design, operating and monitoring requirements are necessary for land treatment facilities managing hazardous wastes F020, F021, F022 and F023 in order to reduce the possibility of migration of these wastes to groundwater, surface water or air so as to protect human health and the environment.

Unsaturated Zone Monitoring

340-115-400 An owner or operator shall establish an unsaturated zone monitoring program consisting of soil and soil-pore liquid monitoring in the zone immediately below the treatment zone to determine whether hazardous constituents have migrated out of the treatment zone. The Department will approve the specifics of this program after considering the frequency, timing, and rate of waste application, and the soil permeability.

340-115-410 (1) The Department will approve the hazardous constituents to be monitored which will generally consist of those specified pursuant to rule 340-115-300(1).

(2) The Department may select other waste constituents to be monitored in lieu of or in addition to the hazardous constituents specified under

section (1) of this rule if, based on waste analyses, treatment demonstrations, or other data, they appear to better indicate whether the waste is being effectively degraded or immobilized.

340-115-420 An owner or operator shall install a monitoring system that includes soil monitoring using soil cores and soil-pore liquid monitoring devices such as lysimeters. There must be a sufficient number of sampling points at appropriate locations and depths to yield samples that satisfactorily indicate:

(1) The quality of background soil-pore liquid and the chemical makeup of soil that has not been affected by wastes placed on the treatment zone; and

(2) The quality of soil-pore liquid and the chemical makeup of the soil below the treatment zone.

340-115-430 An owner or operator shall establish and obtain Department approval of a background value for each hazardous or other waste constituent monitored pursuant to rule 340-115-410. At a minimum:

(1) Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone; and

(2) Background soil-pore liquid values must be based on quarterly sampling for one year at a background plot having characteristics similar to those of the treatment zone.

340-115-440 An owner or operator shall use consistent sampling and analysis procedures designed to ensure that the monitoring results provide a reliable indication of soil-pore liquid quality and the chemical makeup of the soil below the treatment zone. At a minimum, the owner or operator shall implement procedures and techniques for:

(1) Sample collection, preservation, shipment and chain of custody control;

(2) Analytical methods that are appropriate to the samples and that accurately measure the constituents being monitored; and

(3) Reporting the results in the form necessary for the determination of statistically significant increases pursuant to rule 340-115-450.

340-115-450 An owner or operator shall determine if there is a statistically significant increase over background values for any constituent being monitored below the treatment zone each time he conducts soil and soil-pore liquid monitoring.

(1) The value of each constituent shall be compared to its background value according to the statistical procedure approved by the Department.

(2) The comparison must be made within a reasonable time after completion of sampling. The Department will specify the time period considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of soil and soil-pore liquid samples.

(3) The statistical procedure to be used must provide reasonable confidence that migration from the treatment zone will be identified. The Department will approve a procedure which:

(a) Is appropriate for the distribution of the data used to establish background values; and

(b) Provides a reasonable balance between the probability of falsely identifying migration from the treatment zone and the probability of

failing to identify such migration.

340-115-460 If an owner or operator determines, pursuant to rule 340-115-450, that there is a statistically significant increase of hazardous constituents below the treatment zone, he shall:

(1)(a) Notify the Department of this finding in writing within seven days specifying which constituents have shown statistically significant increases; or

(b) If he believes that a source other than the land treatment facility caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation, notify the Department of this belief in writing within seven days; and

(A) Within 90 days: Submit to the Department:

(i) A demonstration that a source other than the land treatment facility caused the increase or that the increase resulted from error in sampling, analysis, or evaluation; and

(ii) A plan to make any appropriate changes to the unsaturated zone monitoring program at the facility;

(B) Continue to monitor in accordance with the established monitoring program; and

(2) Within 90 days: Submit to the Department a proposal to modify the operating practices at the facility in order to maximize the success of degradation or immobilization processes in the treatment zone. This proposal may be withdrawn if a demonstration under subsection (1)(b) of this rule is successful.

Closure

340-115-500 During closure of a land treatment facility, an owner or operator shall:

(1) Apply to the Department for a hazardous waste land treatment post-closure license;

(2) Continue all operations (including pH control) necessary to maximize the degradation or immobilization of hazardous constituents within the treatment zone as required by rule 340-115-300;

(3) Continue all operations in the treatment zone to minimize wind dispersal and run-off of hazardous constituents as required by rule 340-115-310;

(4) Maintain the run-on and run-off control systems required by rule 340-115-200;

(5) Continue the unsaturated zone monitoring program in compliance with rules 340-115-400 to -460, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone; and

(6) Not grow any food-chain crops in the treatment zone.

340-115-510 Immediately after closure, an owner or operator shall establish a vegetative cover that will not impede degradation or immobilization of hazardous constituents that remain in the treatment zone. The vegetative cover must be capable of maintaining growth without excessive maintenance.

Post-Closure

340-115-600 After closing a land treatment facility, an owner or operator shall comply with the post-closure requirements specified in the

post-closure license, until the end of the post-closure care period, including:

(1) Continuing all operations (including pH control) necessary to enhance degradation and sustain immobilization of hazardous constituents in the treatment zone to the extent that such measures are consistent with other post-closure care activities;

(2) Maintaining the run-on and run-off control systems required by rule 340-115-200;

(3) Controlling wind dispersal of hazardous waste as required by rule 340-115-310;

(4) Continuing the unsaturated zone soil monitoring program in compliance with rules 340-115-400 to -460;

(5) Maintaining the security of the site;

(6) Providing any remedial action necessary to protect public health and the environment;

(7) Maintaining a vegetative cover over closed portions of the facility; and

(8) Not growing any food-chain crops until the end of the post-closure care period.

340-115-610 An owner or operator need not comply with rules 340-115-600(1) to (6) if the Department finds that the level of hazardous constituents in the treatment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the procedure approved pursuant to rule 340-115-450. The owner or operator may submit such a demonstration to the Department at any time during closure or the post-closure care period.

(1) The hazardous constituents that must be tested are those specified by the Department pursuant to rule 340-115-410. Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone.

(2) Samples used in the determination of background and treatment zone values must be taken at a sufficient number of points and at appropriate locations and depths to be representative of the chemical makeup of soil that has not been affected by waste placed on the treatment zone and the soil within the treatment zone, respectively.

(3) In determining whether a statistically significant increase has occurred, the owner or operator shall compare the value of each constituent in the treatment zone to the background value for that constituent using a statistical procedure that provides reasonable confidence that constituent presence in the treatment zone will be identified. The statistical procedure must:

(A) Be appropriate for the distribution of the data used to establish background values; and

(B) Provide a reasonable balance between the probability of falsely identifying the presence of hazardous constituents in the treatment zone and the probability of failing to identify their presence.

340-115-620 An owner or operator need not comply with Division 107 during the post-closure care period if he makes a satisfactory demonstration under rule 340-115-610 and if the unsaturated zone monitoring program established under rules 340-115-400 to -460 indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment facility.

340-115-630 An owner or operator that has land treated wastes containing cadmium shall notify future property owners via the land record or property deed of the cadmium application and that animal feed, grown as follows, must be the only food-chain crop produced:

(1) The pH of the soil must be 6.5 or greater at the time the crop is planted, and this pH level must be maintained whenever animal feed is grown; and

(2) There must be an operating plan describing the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, including a demonstration how the animal feed will be distributed to preclude ingestion by humans.

DIVISION 116
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Landfills

Purpose

340-116-010 The purpose of this division is to specify construction and operating standards for hazardous waste landfills.

Authority

340-116-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-116-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-116-040 The rules of this division apply to owners or operators of landfill facilities used to dispose of hazardous waste except as may be exempted by rule 340-106-040.

Construction

340-116-100 An owner or operator shall design, construct, and maintain a landfill (except for an existing portion) to prevent any migration of wastes out of the landfill at any time during the active life (including closure) of the landfill, including:

(1) A liner that is:

(a) Constructed of material that has appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which it is exposed, climatic conditions, and the stress of daily operation. The liner must prevent waste from passing into it during the active life of the landfill;

(b) Placed upon a foundation or base capable of supporting it and resistant to pressure gradients from above and below to prevent failure of the liner due to settlement, compression or uplift; and

(c) Installed to cover all surrounding earth likely to be in contact with the waste or leachate;

(2) A leachate collection and removal system immediately above the liner designed and constructed to collect and remove leachate from the landfill. The system must be:

(a) Sized to ensure that the leachate depth over the liner does not exceed one foot;

(b) Constructed of materials that are chemically resistant to the wastes placed in the landfill and the leachate expected to be generated; and of sufficient strength and thickness to prevent collapse under the pressures exerted by the overlying wastes, cover materials and any equipment used in the landfill; and

(c) Designed to function without clogging through the operating life

of the landfill;

(3) A run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from a 24-hour, 25-year storm.

(4) A run-off control system to collect the water resulting from a 24-hour, 25-year storm. Any holding facilities (e.g., tanks or basins) associated with the run-off control system must be designed to be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.

340-116-110 During and following installation of the liner, an owner or operator shall inspect and verify that:

(1) Synthetic liners have tight seams and joints with no tears, punctures or blisters; and

(2) Soil-based and admixed liners have no imperfections including lenses, cracks, channels, root holes or other structural non-uniformities that may cause an increase in permeability.

340-116-150 The Department may grant an owner or operator an exemption from rules 340-116-100(1) and (2) if he can demonstrate that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents from the landfill into surface water or groundwater at any future time. This exemption will be based upon:

(1) The nature and quantity of the wastes;

(2) The proposed alternate design and operation;

(3) The hydrogeologic setting of the landfill, including the attenuative capacity and thickness of the liners and soils present between the landfill and surface water or groundwater; and

(4) Any other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to surface water or groundwater.

340-116-160 An owner or operator shall be exempted from the groundwater monitoring requirements of Division 107 if the landfill is:

(1) Designed and constructed:

(a) Entirely above the seasonal high water table;

(b) With a double liner, each, of which, meets the specifications of rule 340-116-100(1) and prevents the migration of liquid into or out of the space between them;

(c) With a leachate detection system between the liners to detect any migration of liquids into that space; and

(d) With a leachate collection and removal system above the top liner as specified in rule 340-116-100(2); and

(2) Monitored so that if liquid leaks into the leak detection system, the owner or operator will:

(a) Notify the Department of the leak in writing within seven days after its detection; and

(b) Within the period of time specified in the license:

(A) Remove the accumulated liquid, repair or replace the leaking liner, and obtain a certification from a qualified engineer that, to the best of his knowledge and opinion, the leak has been stopped; or

(B) Establish a detection monitoring program and comply with all applicable requirements of Division 107.

340-116-170 An owner or operator disposing of PCB wastes shall comply with the following additional requirements:

(1) In the event the owner or operator obtains an exemption from rule 340-116-100(1), the landfill shall be located in soil with a high clay and silt content with the following parameters:

(a) In-place soil thickness at least 4 feet or compacted soil liner thickness at least 3 feet;

(b) Permeability equal to or less than 1×10^{-7} cm/sec;

(c) Percent soil passing No. 200 Sieve, > 30;

(d) Liquid limit, > 30; and

(e) Plasticity index > 15.

(2) There shall be no exemption from the requirements of rule 340-116-100(2).

(3) The bottom of the landfill liner or natural in-place soil barrier shall be at least fifty feet above the seasonal high water table.

Operation

340-116-200 An owner or operator shall manage the landfill in a manner that will minimize the possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fire, explosion or the discharge of waste by:

(1) Not placing ignitable or reactive waste in a landfill unless it is treated or mixed before or immediately after placement in the landfill so that the resultant is no longer ignitable or reactive; or

(2) For ignitable waste: Disposing of it in containers in such a way that it is protected from any material or conditions which may cause it to ignite. At a minimum, the containers must be non-leaking and carefully handled so as to avoid heat, sparks, rupture or any other condition that might cause ignition; must be covered daily with soil or other non-combustible material to minimize the potential for ignition; and must not be disposed in the same portion of the landfill with other wastes which may generate sufficient heat to cause ignition or are sufficiently reactive to support combustion;

(3) Not placing incompatible wastes or substances in contiguous portions of the landfill unless measures are taken to prevent any reaction;

(4) After storms, emptying or otherwise expeditiously managing collection and holding facilities associated with run-off control systems to maintain design capacity of the systems; and

(5) Managing the landfill to control wind dispersal if it contains particulate matter which may be subject to wind dispersal.

340-116-210 (1) Except as may be permitted by section (2) of this rule or by rules 340-116-220(2)(b) to (d), after January 1, 1985, an owner or operator shall not, in any manner, landfill liquids containing the following hazardous wastes (or free liquid portions of the wastes) if the waste was initially generated as a liquid:

(a) Wastes containing greater than 3% halogenated hydrocarbons, halogenated phenols or mixtures thereof;

(b) Volatile wastes;

(c) Wastes containing greater than 3% of any organic substance or mixture of organic substances listed in rule 340-101-210 or greater than 10% of any organic substance or mixture of organic substances listed in rule 340-101-220;

(d) Organic pesticides or organic pesticide manufacturing residues

with oral LD₅₀ <500 mg/kg; and

(e) Wastes that are hazardous only because they meet the characteristic of ignitable and contain no Appendix 101.3 constituent which would reasonably be expected to be present.

(2) The owner or operator may apply for an exemption from section (1) of this rule for a specific liquid hazardous waste if he can demonstrate that:

(a) The disposal will not pose a threat to public health or the environment due to the properties of the waste, characteristics of the landfill, the proposed disposal procedure and other relevant circumstances; and

(b) The waste generator has taken all practicable steps to eliminate or minimize the generation of the waste and to recover, concentrate, or render the waste non-hazardous.

NOTE: This rule does not pertain to liquids which become mixed with soil or other debris as the result of a spill.

340-116-220 (1) Bulk liquid wastes or wastes containing free liquids not banned from landfilling pursuant to rule 340-116-210 shall be treated or stabilized before disposal so that free liquids are no longer present.

(2) Containers holding free liquids must not be placed in a landfill unless:

(a) All free liquid has been removed by decanting, mixing with a sorbent material or solidifying so that free liquid is no longer observed; or

(b) The container is very small, such as an ampule; or

(c) The container is designed to hold free liquids for a use other than storage, such as a battery or capacitor; or

(d) The container is a lab pack defined and disposed in accordance with section (3) of this rule.

(3) Small containers holding liquids and reactive wastes may be disposed in a landfill if they are placed in larger metal shipping containers (lab packs) in accordance with the following:

(a) The small containers must be designed and constructed of a material that will not react with, be decomposed, or be ignited by the contained waste. They must be non-leaking and of the size and type specified by DOT in 49 CFR Parts 173 or 178, if those regulations specify a particular container for the waste;

(b) The small containers must be placed in an open head DOT-specification metal shipping container (49 CFR Parts 173 and 178) of no more than 110 gallon capacity, and surrounded by a sufficient quantity of sorbent material to completely absorb all of the liquid in the small containers. The metal shipping container must be full after packing with small containers and sorbent material;

(c) The sorbent material must not be capable of reacting with, being decomposed, or being ignited by the contents of the small containers;

(d) Incompatible wastes must not be placed in the same metal shipping container; and

(e) Reactive wastes, other than cyanide- or sulfide-bearing waste, must be treated or rendered non-reactive prior to placing in the metal shipping container. Cyanide- and sulfide-bearing waste may be packed without first being rendered non-reactive.

340-116-230 Unless they are very small, such as an ampule, an owner or operator shall not place containers in a landfill unless they are:

- (1) At least 90 percent full; or
- (2) Crushed shredded, or otherwise reduced in volume to the maximum extent practicable.

340-116-240 (1) Hazardous wastes F020, F021, F022 and F023 must not be placed in a landfill unless the owner or operator operates the landfill in accordance with a management plan for these wastes that is approved by the Department after consideration of the following factors:

- (a) The volume, physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;
- (b) The attenuative properties of underlying and surrounding soils or other materials;
- (c) The mobilizing properties of other substances commingled with these wastes; and
- (d) The effectiveness of additional treatment, design or monitoring techniques.

(2) The Department may determine that additional design, operating, and monitoring requirements are necessary for landfills managing hazardous wastes F020, F021, F022 and F023 in order to reduce the possibility of migration of these wastes to groundwater, surface water or air so as to protect human health and the environment.

340-116-250 An owner or operator disposing of PCB wastes shall:

- (1) Place them in the landfill in a manner that will prevent damage to any outside container; and
- (2) Segregate them from other wastes during waste handling and disposal.

340-116-260 An owner or operator shall map the following items in the operating record required by rule 340-106-550:

- (1) The location and dimensions, including depth, of each landfill with respect to permanently surveyed benchmarks; and
- (2) The type, quantity and location of each waste within the landfill.

340-116-270 An owner or operator shall inspect an operating landfill weekly and after storms to detect evidence of:

- (1) Deterioration, malfunctions or improper operation of run-on and run-off control systems;
- (2) The presence of liquids in leak detection systems, where installed pursuant to rule 340-116-160;
- (3) Improper functioning of wind dispersal control systems, where present; and
- (4) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

Closure

340-116-300 At closure of a landfill, an owner or operator shall:

- (1) Apply to the Department for a hazardous waste disposal site post-closure license; and
- (2) Cover the landfill with a final cover designed and constructed to:
 - (a) Minimize the long-term migration of liquids from the closed landfill;

- (b) Function with minimum maintenance;
- (c) Promote drainage and minimize erosion or abrasion of the cover;
- (d) Accommodate settling and subsidence so that its integrity is maintained; and
- (e) Have a permeability less than or equal to the permeability of any bottom liner or natural subsoils present.

NOTE: The requirements of section (2) of this rule shall be incorporated into the closure plan required by rule 340-108-110.

Post-Closure

340-116-400 After closing a landfill, an owner or operator shall comply with the post-closure requirements specified in the post-closure license, until the end of the post-closure care period, including:

- (1) Maintaining the integrity and effectiveness of the final cover, including repairing as necessary to correct the effects of settling, subsidence, erosion, or other events;
- (2) Maintaining and monitoring the double-liner leak detection system where installed pursuant to rule 340-116-160;
- (3) Continuing to operate the leachate collection and removal system until leachate is no longer detected;
- (4) Maintaining and monitoring the groundwater monitoring system in compliance with all applicable requirements of Division 107;
- (5) Preventing run-on and run-off from eroding or otherwise damaging the final cover; and
- (6) Protecting and maintaining surveyed benchmarks used to comply with rule 340-106-550(2).
- (7) Maintaining the security of the site; and
- (8) Providing any remedial action necessary to protect public health and the environment.

NOTE: The requirements of this rule shall be incorporated into the post-closure plan required by rule 340-108-310.

DIVISION 117
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Incinerators

Purpose

340-117-010 The purpose of this division is to specify performance, operating, and monitoring standards for hazardous waste incinerators.

Authority

340-117-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-117-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-117-040 The rules of this division apply to owners or operators of facilities that incinerate hazardous waste, with the following exceptions:

- (1) Those listed in rule 340-106-040;
- (2) Incinerators which burn waste listed in this section are exempt from the requirements of this division except rules 340-117-210, -270, and -300 if the waste contains none of the hazardous constituents listed in Appendix 101.3 which would reasonably be expected to be in the waste; and
 - (a) The waste is hazardous only because it meets the characteristic of ignitable, rule 340-101-100(1), corrosive, rule 340-101-110(1), or is listed in rules 340-101-220(1), -230(1), or -240(1) only because it possesses these characteristics; or
 - (b)(A) The waste is hazardous only because it meets the modified reactive characteristic, rule 340-101-120(1) excluding subsection (b), or is listed in rules 340-101-220(1), -230(1), or -240(1) only because it possesses this modified characteristic; and
 - (B) The waste will not be burned with other hazardous wastes.
 - (c) The incineration complies with all State air quality rules.
- (3) Incinerators which burn waste listed in and under the conditions of section (2) of this rule except that the waste contains measurable but insignificantly small concentrations of hazardous constituents listed in Appendix 101.3, may be exempted from all requirements of this division, except rules 340-117-210, -270, and -300, if the Department finds that burning the waste will pose no threat to human health and the environment.

NOTE: An owner or operator shall also apply for a State Air Contaminant Discharge Permit pursuant to rule 340-20-155.

340-117-050 For a new hazardous waste incinerator, the Department will establish appropriate conditions for each of the applicable requirements of this division, including but not limited to allowable waste feeds and operating conditions, in accordance with the following standards:

- (1) For the period beginning with the initial introduction of

hazardous waste and ending with initiation of the trial burn, and only for the minimum time required to establish the operating conditions required by section (2) of this rule but not to exceed a duration of 720 hours operating time, the operating requirements will be those the Department deems most likely to ensure compliance with the performance standards of rules 340-117-100 and -110. The Department may extend the duration of this period once for an additional 720 hours when good cause for the extension is demonstrated by the owner or operator.

(2) For the duration of the trial burn, the operating requirements will be in accordance with the approved trial burn plan and sufficient to demonstrate compliance with the performance standards of rules 340-117-100 and -110.

(3) For the period immediately following completion of the trial burn, and only for a period sufficient to allow submission of the trial burn results by the owner or operator and review by the Department, the operating requirements will be those deemed most likely to ensure compliance with the performance standards of rules 340-117-100 and -110.

(4) For the remaining duration of the license, the operating requirements will be those demonstrated, in a trial burn or by alternative data, to be sufficient to ensure compliance with the performance standards of rules 340-117-100 and -110.

Performance

340-117-100 (1) An owner or operator shall design, construct and maintain an incinerator (including auxiliary pollution control equipment) so that, when operated in accordance with the operating requirements specified in rule 340-117-200, it will:

(a) Achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) approved by the Department for each waste feed. The DRE is determined for each POHC from the following equation:

$$DRE = \frac{(W_{in} - W_{out})}{W_{in}} \times 100\%$$

Where:

W_{in} = Mass feed rate of one POHC in the waste stream feeding the incinerator, and

W_{out} = Mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere;

(b) If stack emissions of more than 4 pounds/hour of hydrogen chloride (HCl) are produced, control the rate of HCl emission so that it does not exceed the larger of either 4 pounds/hour or 1% of the HCl in the stack gas before it enters any pollution control equipment; and

(c) Not emit particulate matter in excess of 0.08 grains/dry standard cubic foot when corrected for the amount of carbon dioxide in the stack gas according to the formula:

$$P_c = P_m \times \frac{12}{Y}$$

Where:

P_c = Corrected concentration of particulate matter (gr/dscf),

P_m = Measured concentration of particulate matter (gr/dscf), and

Y = Measured concentration of carbon dioxide in the stack gas, using the Orsat method for carbon dioxide analysis of dry flue gas, Method 3, DEQ Source Sampling Manual, Vol. 1, Rev. 8/81.

This correction procedure is to be used for all hazardous waste incinerators except those operating under conditions of oxygen enrichment for which the Department will select an appropriate correction procedure.

(2) The Department may, on an individual basis, establish performance standards which differ from those required by section (1) of this rule based on a finding that:

(a) More stringent standards are necessary because the emission rates achieved by the application of the stated performance standards may pose an unacceptable risk to human health or the environment; or

(b) Less stringent standards will achieve emission rates which do not pose an unacceptable risk to human health and the environment.

340-117-110 An owner or operator incinerating halogenated aromatics (including PCBs) shall maintain the following combustion criteria:

(1) Maintain the introduced wastes for a 2-second dwell time at $1200^{\circ}\text{C} \pm 100^{\circ}\text{C}$ and 3% excess oxygen in the stack gas; or

(2) Maintain the introduced wastes for a 1-1/2-second dwell time at $1600^{\circ}\text{C} \pm 100^{\circ}\text{C}$ and 2% excess oxygen in the stack gas.

340-117-120 An owner or operator incinerating PCB wastes shall comply with the following additional performance requirements:

(1) For non-liquid PCBs: The mass air emissions from the incinerator shall be no greater than 0.001lb PCB/lb of the PCB introduced into the incinerator.

(2) The combustion efficiency shall be at least 99.9% computed as follows:

$$\text{Combustion efficiency} = \frac{\text{CO}_2}{\text{CO}_2 + \text{CO}} \times 100$$

Where:

CO₂ = Concentration of carbon dioxide

CO = Concentration of carbon monoxide

(3) A mechanism shall be provided to automatically stop the flow of PCBs to the incinerator when:

(a) For liquid PCBs: The combustion temperature drops below the temperatures specified in rule 340-117-110; and

(b) Any one of the following conditions occurs, unless the owner or operator has a contingency plan approved by the Department indicating the alternative measures to be taken in that event:

(A) For liquid PCBs: Excess oxygen falls below the percentage specified in rule 340-117-110; or

(B) Failure of any equipment used to perform the monitoring required by rules 340-117-250 and -260.

(4) Water scrubbers meeting Department air quality performance requirements shall be used for HCl control. Scrubber effluent shall be monitored and managed in compliance with all applicable effluent or pretreatment standards. Alternate methods of HCl control may be used subject to Department approval.

NOTE: The HCl neutralizing capability of cement kilns is considered to be an alternate method.

Operation

340-117-200 An owner or operator shall incinerate only wastes approved by the Department and only under operating conditions specified

for those wastes. Such conditions will be based upon either a trial burn to develop the information required by Appendix 120.1, Part J.I, or alternative data developed in accordance with the analytical procedure of Part J.II of that same appendix, deemed to be sufficient to comply with the performance standards of rules 340-117-100 and -110.

340-117-210 Before initially incinerating any waste, an owner or operator shall fully analyze it for:

- (1) Its heat value in the form and composition in which it will be burned;
- (2) Its viscosity or other appropriate physical description;
- (3) Its major constituents (any constituent in excess of 3%); and
- (4) Any hazardous constituents listed in Appendix 101.3 which would reasonably be expected to be in the waste. The hazardous constituents excluded from analysis must also be identified and the basis for their exclusion stated. The waste analysis shall rely on analytical techniques specified in Test Methods for Evaluating Solid Waste, Second Ed., July 1982 (SW-846) or their equivalent.

340-117-220 An owner or operator shall treat the principal organic hazardous constituents in the waste feed to the extent required by rules 340-117-100 and -110. These POHCs will be specified by the Department from among the hazardous constituents listed in Appendix 101.3 for each waste feed to be burned and will be based upon their difficulty to incinerate and their concentration in the waste feed, considering the results of waste analyses and previous or trial burns. Hazardous constituents which are the most difficult to incinerate and are present in large quantities or concentrations in the waste are the most likely to be designated POHCs.

340-117-230 The Department will specify operating conditions for the incinerator considering:

(1) The composition of the waste feed (including acceptable variations in physical or chemical properties) and for each such feed, acceptable operating limits including:

- (a) Carbon monoxide level in the stack exhaust gas;
- (b) Waste feed rate;
- (c) Combustion temperature;
- (d) An appropriate indicator of combustion gas velocity;
- (e) Allowable variations in operating procedures; and
- (f) Such other operating requirements as are necessary to ensure that the performance standards of rules 340-117-100 and -110 are met;

(2) The need to prevent hazardous waste from being fed into the incinerator when operating conditions deviate from those specified by the Department; and

(3) The means to control fugitive emissions from the combustion zone including:

- (a) Keeping the combustion zone totally sealed against fugitive emissions; or
- (b) Maintaining a combustion zone pressure lower than atmospheric pressure; or
- (c) An alternate means of control adequate to provide fugitive emissions that is equivalent to maintaining the combustion zone pressure lower than atmospheric pressure.

340-117-240 An owner or operator shall not operate the incinerator when changes in waste feed, incinerator configuration, or operating conditions fall out of the limits specified by the Department.

340-117-250 An owner or operator shall, at a minimum, conduct the following monitoring while incinerating hazardous waste:

(1) Sufficient waste analysis to verify that the waste feed is within the physical and chemical composition limits specified by the Department;

(2) On a continuous basis: Combustion temperature, waste feed rate, the indicator of combustion gas velocity and carbon monoxide in the stack emissions; and

(3) Other sampling and analysis of the waste and exhaust emissions as may be specified by the Department to verify that the incinerator is being operated in the manner necessary to achieve the performance standards of rules 340-117-100 and -110.

NOTE: Unless otherwise approved by the Department, all monitoring shall conform to methods and procedures on file, including DEQ Source Sampling Manual, Vol. 1, Rev. 8/81.

340-117-260 An owner or operator incinerating PCB wastes shall conduct the following additional stack emissions monitoring:

(1) For such parameters as may be specified by the Department including O₂, CO₂, NO_x, HCl, PCBs, total organic halogen, and total particulate when an incinerator is first used for the disposal of PCBs or likewise used after being modified in a manner which may affect the characteristics of the stack emission; and

(2) During normal operation:

(a) Continuously for O₂;

(b) Periodically, as specified by the Department, for CO₂ and such other parameters as may be specified by the Department.

340-117-270 An owner or operator shall inspect the following while incinerating hazardous waste:

(1) Daily: The incinerator and associated equipment for leaks, spills, fugitive emissions and signs of tampering; and

(2) Weekly: The emergency wastes feed cutoff system and associated alarms to verify operability, unless it can be demonstrated that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, operational testing must be conducted at least monthly.

340-117-280 An owner or operator shall record all waste analyses and monitoring and inspection data in the operating record required by rule 340-106-550.

Closure

340-117-300 At closure an owner or operator shall remove or decontaminate all waste residues (including ash, scrubber waters, and scrubber sludges) and incinerator parts and appurtenances contaminated by the hazardous waste.

Appendix 117.1 Operating requirements for an owner or operator of a boiler or an industrial furnace burning PCB-contaminated liquid ($50 \leq \text{PCB} < 500$ ppm):

(1) If the boiler or industrial furnace uses natural gas or oil as the primary fuel, the carbon monoxide in the stack emissions must be 50 ppm or less and the excess oxygen 3% or greater.

(2) If the boiler or industrial furnace uses coal as the primary fuel, the carbon monoxide in the stack must be 100 ppm or less and the excess oxygen 3% or greater.

(3) The boiler or industrial furnace must operate at an output of no less than 50 million Btu/hr.

(4) The PCB-contaminated liquid must not comprise more than 10% (on a volume basis) of the total fuel feed rate.

(5) The PCB-contaminated liquid must not be fed into the boiler or industrial furnace unless it is at its normal operating temperature (this prohibits feeding PCB-contaminated liquid during either start-up or shut-down);

(6) The owner or operator of the boiler or industrial furnace must monitor, record and retain for five years:

(a) The carbon monoxide concentration and excess oxygen percentage in the stack gas:

(A) Continuously; or

(B) If the boiler burns less than 30,000 gallons of PCB-contaminated liquid per year: At regular intervals of no longer than one hour.

(b) The primary fuel feed rate, PCB-contaminated liquid feed rate and total quantities of both primary fuel and PCB-contaminated liquid fed to the boiler at regular intervals of no longer than 15 minutes;

(c) The quantity of PCB-contaminated liquid burned in the boiler each month; and

(d) The composition of the waste required by Appendix 120.1, Part K(6), at least once a month for each month during which PCB-contaminated liquid is burned in the boiler.

(7) The owner or operator shall check the carbon monoxide concentration and the excess oxygen percentage at least once every hour. If either measurement falls below the levels specified in sections (1) or (2) of this Appendix, the flow of waste to the boiler shall be stopped immediately.

DIVISION 118: Reserved

DIVISION 119: Reserved

DIVISION 120
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Licensing Procedures

Purpose

340-120-010 The purpose of this division is to establish the requirements and procedures for obtaining a hazardous waste management facility license.

Authority

340-120-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-120-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-120-040 The rules of this division apply to persons required to obtain a hazardous waste management facility license or letter of authorization pursuant to rule 340-106-040.

License Required

340-120-100 No person shall establish, construct, or operate a hazardous waste management facility without first obtaining a license issued by the licensing body pursuant to the requirements of this division.

(1) Licenses shall establish minimum requirements for the construction, operation, maintenance, monitoring, reporting, financial assurance, and supervision of a hazardous waste management facility, and shall be properly conditioned to ensure compliance with pertinent local, State and federal standards and other requirements and to adequately protect human health, welfare, safety, and the environment.

(2) The license may, when appropriate, specify a schedule of compliance leading to compliance with these rules.

(a) If a license establishes a schedule of compliance which exceeds 1 year from the date of issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(b) The time between interim dates shall not exceed 1 year; except that, if the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the license shall specify interim dates for the submission of progress reports toward completion of the interim requirements and indicate a projected completion date.

(3) Licenses shall be addressed to the applicant for the facility of record, and shall be terminated automatically:

(a) At the time of a change in the owner or operator of the facility;

(b) Upon significant change in the nature of the activities, emissions or discharges from those of record in the last application;

(c) Upon issuance of a new, renewal or modified license for the same operation; or

(d) Upon written request of the licensee.

(4) The issuance of a license does not convey any property right or exclusive privilege nor does it authorize any injury to private property or any invasion of personal rights, nor any violation of federal, State or local rules or regulations.

(5) The duration of a license shall be variable but not to exceed 10 years.

(6) Licensing bodies: Disposal site licenses shall be issued by the Commission; storage and treatment facility licenses shall be issued by the Department.

(7) Disposal site licensing fee (non-refundable): \$5,000.

340-120-110 Prior to closure of a hazardous waste disposal site, the licensee must obtain a hazardous waste disposal site post-closure license from the Department.

(1) Licenses shall establish minimum requirements for post-closure care as required by rule 340-116-400 including, but not limited to, monitoring, security, and providing any remedial action necessary to protect public health, welfare, safety, and the environment.

(2) The license must be maintained until the end of the post-closure care period.

(3) Disposal site post-closure licensing fee (non-refundable): \$2,500.

Application for a License

340-120-150 Any person wishing to obtain a hazardous waste management facility license, shall submit to the Department 8 copies of a written application including, but not be limited to, the appropriate information listed in Appendix 120.1.

(1) Applications will be accepted only from facility operators.

(2) Applications shall be submitted at least 180 days before the license is needed. The Department may grant permission for a later date but, if there is an existing license, such date shall not be later than the expiration date of that license.

(3) All application forms shall be completed in full and signed by both the owner and operator as follows:

(a) For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means 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; or 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 million, if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(b) For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

(c) For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official.

(4)(a) The applicant shall 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 the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

(b) In the event that the owner and operator are not the same persons, the owner may make the following certification in lieu of that required by subsection (3)(a) of this rule:

"I certify that I understand that this application is submitted for the purpose of obtaining a permit to operate a hazardous waste management facility on the property as described. As owner of the property/facility, I understand fully that the facility operator and I are jointly and severally responsible for compliance with both the regulations at OAR Chapter 340, Divisions 106 to 120 and any permit issued pursuant to those regulations."

(5) Applications which are incomplete or unsigned will not be accepted by the Department for filing and will be returned to the applicant for completion. Applications which appear complete will be accepted by the Department for filing.

(6) If the Department determines that additional information is needed, it will request the needed information from the applicant within 14 days. The application will not be considered complete for processing until the requested information is received. The application will be considered to be withdrawn if the applicant fails to submit the requested information within 90 days of the request.

(7) Applicants shall keep records of all data used to complete license applications and any supplemental information for a period of at least 3 years from the date the application is accepted by the Department for filing.

Issuance of a License

340-120-200 Under the direction of the licensing body, the Department will prepare a tentative determination to issue or deny a license for the hazardous waste management facility described in the application. Each application will be reviewed on its own merits and recommendations developed in accordance with provisions of all applicable statutes and rules of the State of Oregon.

(1) Disposal site applications shall be sent to affected State agencies including the State Health Division, the Public Utility Commissioner, the Fish and Wildlife Commission, and the Water Resources Director, for review and comment. If the State Health Division recommends against granting a license, the licensing body must deny the license.

(2) If the tentative determination is to issue a license, the Department shall prepare:

(a) A draft license;

(b) A fact sheet prepared in accordance with Appendix 120.2; and

(c) A public notice prepared in accordance with Appendix 120.3.

(3) The public notice, fact sheet, and draft license shall be mailed to the applicant for review and comment. The applicant must submit comments in writing within 14 days of the Department's mailing if his comments are to receive consideration prior to further action on the

application.

(4) After the 14-day applicant review period has elapsed, the public notice shall be sent to any person reasonably believed to be interested in or affected by the proposed facility. The fact sheet, draft license, application, and other supporting documents shall be available for public inspection and copying. A reasonable fee may be charged for their reproduction and distribution.

(5)(a) For a disposal site: The licensing body shall conduct a public hearing in the county where the site is proposed to be located and may conduct hearings at other places as it considers necessary. Such hearing(s) shall be scheduled at least 45 days after the mailing of a public hearing notice prepared in accordance with Appendix 120.3.

(b) For a storage or treatment facility: The licensing body shall provide at least 45 days after public notice for comments. During this period, the applicant, any affected State agency, or any interested person or group of persons may request a public hearing with respect to the application. If the Director determines that useful information may be produced thereby, or if there is significant public interest in holding a hearing, a public hearing shall be held prior to the licensing body's final determination. Instances of doubt shall be resolved in favor of holding the hearing. Public notice of the hearing shall be prepared in accordance with Appendix 120.3 and sent to those identified as interested or affected. The hearing shall be scheduled after the end of the 45-day comment period.

(6) All comments received during the public comment period will be considered in the final license determination.

(7) At the conclusion of the public comment period, the licensing body shall make a final determination and notify the applicant thereof in writing. If conditions of the license issued differ from the draft license, the notification shall include the reasons for the changes made. A copy of the license shall be sent with the notification.

If the licensing body determines that the license should be denied, notification shall be in accordance with rule 340-120-220.

Notification of the licensing body's final determination shall also be sent to any person that has attended the public hearing(s), submitted written comments, or requests such notification.

(8) A response to comments shall be prepared in accordance with Appendix 120.4 at the time the license is issued. After 5 days have elapsed, the response to comments, license, and other supporting documents, shall be available for public inspection and copying. A reasonable fee may be charged for their reproduction and distribution.

(9) If the applicant is dissatisfied with the conditions of the license, he may request a hearing before the Commission or its authorized representative. Such a request for hearing shall be made in writing to the Department within 20 days of the date of mailing of the license notification and shall state the grounds for the request. Any hearing shall be conducted pursuant to the rules of the Department.

Denial of a License

340-120-220 If the licensing body proposes to deny issuance of a hazardous waste management facility license, it shall notify the applicant by certified mail of the intent to deny and the reasons for denial. The denial shall become effective 20 days from the date of mailing of such notice unless within that time the applicant requests a hearing before the

Commission or its authorized representative. Such request for a hearing shall be made in writing to the Department and shall state the grounds for the request. Any hearing shall be conducted pursuant to the rules of the Department.

Renewal or Modification of a License

340-120-240 (1) The application and issuance procedure for a hazardous waste management facility license shall apply to renewal of such license and to a modification requested by the licensee.

(2) In the event that it becomes necessary for the licensing body to modify a hazardous waste management facility license due to changing conditions or standards, receipt of additional information or any other reason pursuant to applicable rule or statute, it shall notify the licensee by certified mail and, after 5 days have elapsed, issue public notice of its intent to modify the license. Such notification shall include the proposed modification and the reasons for modification. The modification shall become effective 20 days from the date of mailing of such notice unless within that time the licensee requests a hearing before the Commission or its authorized representative or the Department determines that there is significant public interest in a hearing or a change in the proposed modification. Requests for a hearing by the licensee or any other person shall be made in writing to the Department and shall state the grounds for the request. Any hearing shall be conducted pursuant to the rules of the Department.

A copy of the modified license shall be forwarded to the licensee as soon as possible. The existing license shall remain in effect until the modified license is issued.

Suspension or Revocation of a License

340-120-260 (1) Whenever, in the judgment of the Department from the results of monitoring or surveillance of the operation of a hazardous waste management facility, there is reasonable cause to believe that an immediate danger to the public health, welfare, safety or the environment exists from the continued operation of such facility, without hearing or prior notice, the Department shall order the operation of the site suspended by service of the order on the facility manager.

In a timely manner, the Department may appear in the appropriate circuit court to petition for such equitable relief as is required to protect the public health, welfare, safety or the environment.

The Department may commence proceedings for the revocation of the license if grounds therefor exist.

(2) In the event that it becomes necessary for the licensing body to suspend or revoke a management facility license due to violation of any provision of ORS Chapter 459, non-compliance with these rules or the terms of the license, the threat of degradation of a natural resource, unapproved changes in operation, false information submitted in the application, or any other cause, the licensing body shall notify the licensee by certified mail of its intent to suspend or revoke the license. Such notification shall include the reasons for the suspension or revocation and become effective 20 days from the date of mailing unless within that time the licensee requests a hearing before the Commission or its authorized representative. Such request for a hearing shall be made in writing to the Department and shall state the grounds for the request. Any hearing shall

be conducted pursuant to the rules of the Department.

Continuation of an Existing License

340-120-280 The conditions of an expired license shall continue in force until the effective date of a new license or other Department action provided the licensee has submitted a timely application for license renewal pursuant to rule 340-120-240(1).

Letter of Authorization

340-120-500 The Department may issue a letter of authorization for the following hazardous waste management activities:

(1) In the event of an emergency or to alleviate a situation which may be deleterious to public health or the environment, the Department may authorize the treatment, storage, or disposal of hazardous waste. This authorization:

(a) May be oral or written. If oral, it shall be followed in five days by a written emergency authorization;

(b) Shall not exceed 90 days in duration;

(c) Shall clearly specify the hazardous wastes to be received, and the manner and location of their treatment, storage, or disposal;

(d) May require the applicant to demonstrate that, due to the type and quantity of waste, facility operation, and other relevant factors, the activity is not likely to endanger public health or the environment;

(e) May require the applicant to obtain the consent of a local public agency to accept joint responsibility for the activity;

(f) May be suspended or revoked at any time if it is determined that such action is appropriate to protect public health or the environment;

(g) Shall be accompanied by a public notice published in accordance with Appendix 120.3; and

(h) Shall incorporate, to the extent possible, the applicable requirements of Divisions 106-119.

(2) The operation of a hazardous waste management facility by persons who treat, store, or dispose of 200 lb/mo. or greater of any one or combination of hazardous wastes produced by small generators (those subject to the reduced requirements of rule 340-102-040(2)). This authorization:

(a) Shall be written;

(b) Shall not exceed 5 years in duration;

(c) Shall clearly specify the hazardous wastes to be received, the treatment process, and the disposal of all hazardous products generated by that process;

(d) May require the operator to obtain Department approval prior to receipt of each specific waste;

(e) May require the operator to demonstrate that, due to the type and quantity of waste, its operation, and other relevant factors, the facility is not likely to endanger public health or the environment;

(f) May be suspended or revoked at any time if it is determined that such action is appropriate to protect public health or the environment; and

(g) Shall incorporate, to the extent possible, the applicable requirements of Divisions 106-119.

(3) A boiler or industrial furnace to burn PCB-contaminated liquid ($50 \leq \text{PCB} < 500$ ppm). This authorization:

(a) Shall be written pursuant to a request submitted in accordance

with Appendix 120.5;

- (b) Shall not exceed 5 years in duration;
- (c) Shall be limited to boilers rated 50 million Btu/hr or greater;
- (d) May require the applicant to demonstrate that, due to the type and quantity of waste, facility operation, and other relevant factors, the burning is not likely to endanger public health or the environment;
- (e) May be suspended or revoked at any time if it is determined that such action is appropriate to protect public health or the environment;
- (f) Shall incorporate the applicable requirements of Appendix 117.1.

**Disposal of a Specified Hazardous Waste in a Specified
Solid Waste Disposal Site**

340-120-550 The Department may permit the disposal of a specified hazardous waste in a specified solid waste disposal site. This shall be granted as a Solid Waste Permit, or amendment thereto, issued in accordance with OAR Chapter 340, Division 61 provided that:

(1) The applicant demonstrates that, due to the properties of the waste, characteristics of the disposal site, disposal procedure, and other relevant circumstances, the disposal is not likely to endanger public health or the environment.

(2) The waste generator demonstrates that:

(a) All practicable steps have been taken to eliminate or minimize the generation of the waste and to recover, concentrate, or render the waste nonhazardous; and

(b) The disposal of the waste at a hazardous waste disposal site is burdensome to an extent which makes such disposal severely detrimental to the generator's activities without providing commensurate public health or environmental benefits.

Appendix 120.1: Information Required for a Hazardous Waste Management Facility License

<u>Part</u>	<u>Type of Information</u>	<u>Type of Facility</u>	<u>Page</u>
A	Applicant's Background	T, S, D	1.2
B	General Operation	T, S, D	1.3
C	Groundwater Monitoring	T, S, D	1.8
D	Container Storage	S	1.11
E	Tanks	T, S	1.13
F	Surface Impoundments	T, S	1.14
G	Waste Piles	T, S	1.16
H	Land Treatment	T	1.18
I	Landfills	D	1.21
J	Incinerators	T	1.23

The information required by this appendix shall be submitted to the Department by an applicant for a hazardous waste management facility license or when requesting approval of a new waste management facility.

A. Applicant's Background

For all hazardous waste management facilities:

(1) The activities to be conducted by the applicant which require the issuance of a license.

(2) The name, address, phone number and legally described location of the proposed facility.

(3) The nature of the applicant's business including those SIC codes which best reflect the principal products or services to be provided by the facility.

(4)(a) The name, address and phone number of the applicant (facility operator) and person to be directly responsible for the operation of the facility.

(b) A statement of financial condition of the applicant, prepared by a certified public accountant and including assets, liabilities and net worth.

(c) The experience of the applicant in the design, construction, operation and maintenance of hazardous waste management facilities and in the handling of hazardous wastes and substances.

(5) The name, address and phone number of the site owner.

(6) A statement indicating compliance with local land-use plans (use a current DEQ land use compatability form).

(7) A listing of all other licenses, permits, and construction approvals the applicant has received or applied for.

B. General Operation

For all hazardous waste management facilities:

(1) A general description of the site and its operation including photographs of all existing and proposed waste management areas.

(2) The location of the site on a topographic map (or other map if a topographic map is unavailable) extending one mile beyond the site property boundaries, depicting the site and each of its intake and discharge structures; the location of each of its hazardous waste management facilities; and those wells, springs, and other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant.

(3) A schedule and description of the sources, types and quantities of wastes to be accepted by the facility and the processes and procedures for their management.

(4)(a) A description of the size and type of facilities to be constructed, including the size and construction of structures and buildings, the type of drainage, the waste management facilities and maximum capacity of those facilities, the location and source of each water supply, the location and type of fire control equipment, and other significant site details.

(b) A topographic map locating all structures to a distance of 1,000 feet around the site at a scale of 1 inch to not more than 200 feet. (For large facilities, the Department may allow the use of other scales on an individual basis.) Contours must be drawn at an interval sufficiently clear to show the pattern of surface water flow in the vicinity of each facility on the site. For example, contours should be at an interval of 5 feet if relief is greater than 20 feet, or at an interval of 2 feet, if relief is less than 20 feet; but sites located in mountainous areas should use larger contour intervals to adequately show their topographic profiles. The map shall clearly indicate the following:

- (A) Map orientation, scale and date;
- (B) 100-year floodplain area;
- (C) Surface waters including intermittent streams;
- (D) Surrounding land uses (e.g., residential, commercial, agricultural, recreational);
- (E) A wind rose (i.e., prevailing wind-speed and direction);
- (F) Legal boundaries of the site;
- (G) Access control (fences, gates);
- (H) Wells on- and off-site, and use of those wells;
- (I) Buildings, waste management facilities and other structures (e.g., recreation areas, runoff control systems, access and internal roads, storm, sanitary, and process sewerage systems, loading and unloading areas, fire control equipment, etc.); and
- (J) Barriers for drainage or flood control.

(5) An engineering plan covering construction of the site and all its facilities. For a disposal site, this plan must be prepared by a registered professional engineer.

(6) A determination of whether the site or any part is located in a 100-year floodplain. This must indicate the source of data for the determination and include a copy of the relevant Federal Insurance Administration (FIA) flood map or the calculations and maps used if a FIA map is not available. Information shall also be provided identifying the 100-year flood level and any other special factors (e.g., wave action) which must be considered in designing, constructing, operating or

maintaining the facility to comply with rule 340-106-070.

Owners and operators proposing to locate a hazardous waste management facility in a 100-year floodplain must provide the following information:

(a) An engineering analysis indicating the various hydrodynamic and hydrostatic forces expected to result at the facility as a consequence of a 100-year flood; and

(b) Structural and other engineering studies showing the design of waste management facilities (e.g., tanks, incinerators) and flood protection devices (e.g., floodwalls, dikes) at the site and how these will prevent washout.

(c) In lieu of subsections (a) and (b) of this demonstration, a detailed description of procedures to be followed to remove hazardous waste to safety before the facility is flooded, including:

(A) The timing of such movement relative to flood levels, including estimated time to move the waste, to show that such movement can be completed before floodwaters reach the facility;

(B) An identification of the hazardous waste management facility to which the waste will be moved;

(C) The planned procedures, equipment and personnel to be used and the means to ensure that such resources will be available in time of need; and

(D) The potential for accidental discharges of the waste during movement.

NOTE: Where maps for the National Flood Insurance Program produced by the Federal Insurance Administration of the Federal Emergency Management Agency are available, they will normally be determinative of whether a site is located within or outside of the 100-year floodplain. However, where the FIA map excludes an area (usually areas of the floodplain less than 200 feet in width), these areas must be considered and a determination made as to whether they are in the 100-year floodplain. When FIA maps are not available for a proposed location, the applicant must use equivalent mapping techniques to determine whether the site is within the 100-year floodplain, and if so, what the 100-year flood elevation would be.

(7) The management plan for the site, including the proposed methods of storage, treatment and disposal, the maintenance program, personnel training program, and the proposed emergency measures and safeguards to be provided for the protection of the public, the employees, and the environment.

At a minimum, this plan shall include:

(a) The waste analysis plan required by rule 340-106-100;

(b) An outline of both the introductory and continuing training programs to prepare persons to maintain and operate the site facilities in a safe manner as required by rule 340-106-150. Include a description of the specific training designed to meet the requirements of rule 340-106-150(3);

(c) A description of the security procedures and equipment required to comply with rule 340-106-200;

(d) The inspection schedule required by rule 340-106-250. Include the applicable inspection requirements of Divisions 111 to 117.

(e)(A) A description of the site's preparedness and preventive actions including the procedures, structures and equipment used to:

(i) Prevent hazards in unloading operations (e.g., ramps, special forklifts);

(ii) Prevent runoff from hazardous waste handling areas to other areas of the facility or to the environment, or to prevent flooding (e.g., berms, dikes, trenches);

- (iii) Prevent contamination of water supplies;
 - (iv) Mitigate the effects of equipment failure and power outages; and
 - (v) Prevent undue exposure of personnel to hazardous waste (e.g., protective clothing); and
- (B) A description of the communication or alarm system necessary to demonstrate compliance with rules 340-106-310 and -320;
- (C) A description of the precautions to prevent accidental ignition or reaction of ignitable, reactive or incompatible wastes as required to demonstrate compliance with rule 340-106-340; and
- (D) The site's traffic patterns, estimated number and types of vehicles, and traffic control (e.g., turns across traffic lanes and stacking lanes, access road surfacing and load-bearing capacity, traffic control signals, etc.); and
- (e) The contingency plan required by rule 340-106-400. Include the applicable contingency requirements of Divisions 113, 114 and 116.
- (8)(a) A copy of the closure plan and, where applicable, the post-closure plan required by Division 108. Include the applicable closure and post-closure requirements of Divisions 111-117;
- (b) The most recent closure and post-closure cost estimates for the facility prepared in accordance with Division 108; and
- (c) The type of closure and post-closure financial assurance proposed to be posted by the licensee to comply with Division 108.
- (9) The amount and type of financial responsibility for bodily injury and property damage to third parties to comply with Division 108. A request for a variance in the amount of required coverage, for a new or existing facility, may be submitted as specified in Division 108, but shall in all cases be sufficient to protect the environment, and the health, safety and welfare of the people of the State.
- (10) Such other information as may be deemed necessary by the licensing body to act on the license application.

C. Groundwater Monitoring

For hazardous waste surface impoundments, waste pile facilities, land treatment facilities and landfills, except as otherwise provided by rule 340-107-040, a demonstration of compliance with the groundwater monitoring standards of Division 107, including:

(1) A summary of any groundwater monitoring data that may be available for the site.

(2) Identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the site, including groundwater flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the site).

(3) On the topographic map required by subsection (B)(4)(b) of this appendix, a delineation of the waste management area, the property boundary, the proposed compliance point, the proposed location of groundwater monitoring wells as required by rule 340-107-100 and, to the extent possible, the information required by section (2) of this part.

(4) A description of any plume of contamination that has entered the groundwater from the facility at the time that the application is submitted by:

(a) Delineating the extent of the plume on the topographic map required by subsection (B)(4)(b) of this appendix; and

(b) Identifying the distribution of each hazardous constituent throughout the plume or the maximum concentration of each such hazardous constituent in the plume.

(5) Detailed plans describing the proposed groundwater monitoring program to be implemented to meet the requirements of rule 340-107-100.

(6) If the presence of hazardous constituents has not been detected in the groundwater at the time of this application, submit sufficient information, supporting data and analyses to establish a detection monitoring program meeting the requirements of rules 340-107-200 to -260, including:

(a) A proposed list of parameters, hazardous constituents, and reaction products (i.e., indicators) that can provide a reliable indication of the leaching of hazardous wastes to the groundwater;

(b) A proposed groundwater monitoring system;

(c) Background values for each proposed indicator, or procedures to calculate such values; and

(d) A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating groundwater monitoring data.

(7) If the presence of hazardous constituents has been detected in the groundwater at the time of this application, submit sufficient information, supporting data and analyses to establish a compliance monitoring program meeting the requirements of rules 340-107-300 to -360. An engineering feasibility plan for a corrective action program necessary to meet the requirements of rules 340-107-400 to -460 except as provided in rule 340-107-340(2) must also be submitted. To demonstrate compliance with rules 340-107-300 to -360, the following items must be addressed:

(a) A description of the wastes previously handled at the facility;

(b) A characterization of the contaminated groundwater, including concentrations of hazardous constituents;

(c) A list of hazardous constituents for which compliance monitoring will be undertaken;

(d) Proposed concentration limits for each hazardous constituent,

derived in accordance with rule 340-107-030(2)(c), including a justification for establishing any alternate concentration limits;

(e) Detailed plans describing the proposed groundwater monitoring system, in accordance with the requirements of rule 340-107-100; and

(f) A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating groundwater monitoring data.

(8) If hazardous constituents in the groundwater exceed background values or the concentration limits established in rule 340-107-030(2)(c)-(B), the owner or operator must submit sufficient information, supporting data and analyses to establish a corrective action program which meets the requirements of rules 340-107-400 to -460. However, an owner or operator may not be required to submit information to establish a corrective action program if he demonstrates that alternate concentration limits will protect human health and the environment after considering the criteria listed in rule 340-107-030(2)(c)(C). An owner or operator who is not required to establish a corrective action program for this reason must instead submit sufficient information to establish a compliance monitoring program which meets the requirements of rules 340-107-300 to -360 as described in section (7) of this part.

To demonstrate compliance with rules 340-107-400 to -460, the following items, at a minimum, must be addressed:

(a) A characterization of the contaminated groundwater, including concentrations of hazardous constituents;

(b) The concentration limit for each hazardous constituent found in the groundwater derived in accordance with rule 340-107-030(2)(c);

(c) Detailed plans describing the corrective action to be taken; and

(d) A description of how the groundwater monitoring program will assess the adequacy of the corrective action.

D. Container Storage

For facilities that store hazardous waste in containers, a demonstration of compliance with the construction and operating standards specified in Division 111, including:

(1) A description of the containment system demonstrating compliance with rule 340-111-100(1), including:

(a) Basic design parameters, dimensions and materials of construction;

(b) How the design promotes drainage or how containers are kept from contact with standing liquids in the containment system;

(c) Capacity of the containment system relative to the number and volume of containers to be stored;

(d) Provisions for preventing or managing run-on; and

(e) How accumulated liquids can be analyzed and removed to prevent overflow.

(2) For facilities that store containers that do not contain free liquids, the following demonstration of compliance with rule 340-111-100(2) may be submitted in lieu of section (1) of this demonstration, including:

(a) Test procedures and results or other documentation to show that the wastes do not contain free liquids;

(b) A description of the storage facility showing how the design promotes drainage or how containers are kept from contact with standing liquids; and

(c) Provisions for preventing run-on.

(3) Description of procedures for handling incompatible, ignitable and reactive wastes and the means of compliance with rule 340-111-210.

(4) For a facility that stores PCB wastes, a description of the design, construction, and operating procedures demonstrating compliance with rules 340-111-110 and -230.

E. Tanks

For facilities that store or treat hazardous waste in tanks, a demonstration of compliance with the construction and operating standards specified in Division 112, including:

(1) References to design standards or other available information used in design and construction of the tank.

(2) A description of design specifications including identification of construction materials and lining materials (with pertinent characteristics such as corrosion or erosion resistance).

(3) Tank dimensions, capacity and shell thickness.

(4) A diagram of the piping, instrumentation and process flow.

(5) Description of feed systems, safety cutoff, bypass systems and pressure controls (e.g., vents).

(6) For tanks installed after January 1, 1985, a description of the containment system demonstrating compliance with rule 340-112-120.

(7) Description of procedures for handling incompatible, ignitable, reactive and volatile wastes and the means of compliance with rule 340-112-200.

(8) A description of how hazardous waste residues and contaminated substances will be removed from the tank or decontaminated at closure, as required by rule 340-112-300.

F. Surface Impoundments

For facilities that store or treat hazardous waste in surface impoundments, a demonstration of compliance with the construction and operating standards specified in Division 113.

For new facilities, the construction plans and specifications must be in sufficient detail to provide complete information to a contractor hired to build the facility even if the owner or operator intends to construct the facility without hiring a contractor.

For existing facilities, comparable detail must be provided, but the form of presentation need not assume contractor construction except to the extent that the facility will be modified.

The demonstration shall include:

- (1) A list of the hazardous wastes placed in each surface impoundment.
- (2) Detailed plans describing how the surface impoundment is designed, constructed and maintained to meet the requirements of rule 340-113-100, considering:
 - (a) The liner (except for an existing portion of a surface impoundment). If an exemption from the liner requirement is sought as provided by rule 340-113-150, submit detailed engineering and hydrogeologic plans, as appropriate, describing alternate design and operating practices that will, in conjunction with location conditions, prevent the migration of any hazardous constituents into groundwater or surface water at any future time;
 - (b) Prevention of overtopping; and
 - (c) Structural integrity of dikes.
- (3) If an exemption from Division 107 is sought as provided by rule 340-113-160, detailed plans explaining the location of the saturated zone in relation to the surface impoundment, and the design of a doubly lined system that incorporates a leak detection system between the liners.
- (4) A certification by a qualified engineer attesting to the structural integrity of the dikes, as required by rule 340-113-110(2). For new impoundments, the owner or operator shall submit a statement by a qualified engineer that such certification will be provided upon completion of construction in accordance with the plans and specifications.
- (5) A description of procedures for handling incompatible, ignitable, reactive or volatile wastes and the means of compliance with rule 340-113-200.
- (6) A description of the procedure to be used for removing a surface impoundment from service, as required by rule 340-113-220. This information should be included in the contingency plan required by rule 340-106-400.
- (7) A closure plan, including cost estimates, describing how hazardous substances will be removed or decontaminated at closure, as required by rule 340-113-300. This should include detailed plans, including cost estimates, describing compliance with rule 340-113-310 in the event of non-compliance with rule 340-113-300.
- (8) A post-closure plan, including cost estimates, describing compliance with rule 340-113-400 in the event of non-compliance with rule 340-113-300.

G. Waste Piles

For facilities that store or treat hazardous waste in waste piles, a demonstration of compliance with the construction and operating standards specified in Division 114, including:

- (1) A list of the hazardous wastes placed in each waste pile.
- (2) If an exemption is sought under 340-114-040(2), an explanation of how the requirements for that exemption will be satisfied.
- (3) Detailed plans describing how the pile is designed, constructed and maintained to meet the requirements of rule 340-114-100, considering:
 - (a) The liner and leachate collection and removal system (except for an existing portion of a pile). If an exemption from the requirement for a liner and/or the leachate collection and removal system is sought as provided by rule 340-114-150, submit detailed engineering and hydrogeologic plans, as appropriate, describing alternate design and operating practices that will, in conjunction with location conditions, prevent the migration of any hazardous constituents into groundwater or surface water at any future time;
 - (b) Control of run-on and run-off including the management of associated control systems; and
 - (c) Control of wind dispersal of particulate matter.
- (4) If an exemption from Division 107 is sought as provided by rules 340-114-160(1) or (2), detailed plans describing how the requirements for that exemption will be satisfied.
- (5) If treatment is carried out in a pile, details of the process and equipment used, and the nature and quality of the residuals.
- (6) Description of procedures for handling incompatible, ignitable, reactive or volatile wastes and the means of compliance with rule 340-114-200.
- (7) A closure plan, including cost estimates, describing how hazardous substances will be removed or decontaminated at closure, as required by rule 340-114-300. This should include detailed plans, including cost estimates, describing compliance with rule 340-114-310 in the event of non-compliance with rule 340-114-300.
- (8) A post-closure plan, including cost estimates, describing compliance with rule 340-114-400 in the event of non-compliance with rule 340-114-300.

H. Land Treatment

For facilities that land treat hazardous waste, a demonstration of compliance with the construction and operating standards specified in Division 115, including:

(1) The demonstrations of waste treatment as required by rule 340-115-100, including:

(a) The wastes for which the demonstrations will be made and the hazardous constituents in the wastes;

(b) The data sources to be used to make the demonstrations (e.g., literature, laboratory data, field data or operating data); and

(c) Any specific laboratory or field tests that will be conducted, including:

(A) The type of test (e.g., column leaching, degradation);

(B) Materials and methods, including analytical procedures;

(C) Expected time for completion; and

(D) Characteristics of the facility that will be simulated in the demonstration, including treatment zone characteristics, climatic conditions, and operating practices.

(2) A description of the operating program, as required by rule 340-115-300. This information must be submitted with the treatment demonstrations, and updated following the treatment demonstrations. The operating program must address the following items:

(a) The wastes to be land treated;

(b) A list of the hazardous constituents reasonably expected to be in, or derived from, the wastes to be land treated based on waste analyses performed in accordance with rule 340-106-100;

(c) The dimensions of the treatment area;

(d) Design measures and operating practices necessary to maximize waste degradation or immobilization within the treatment zone, including:

(A) Waste application method and rate;

(B) Measures to control soil pH;

(C) Enhancement of microbial or chemical reactions; and

(D) Control of moisture content; and

(e) Provisions for an unsaturated zone monitoring program as required by rule 340-115-400 and -460, including:

(A) Sampling equipment, procedures and frequency;

(B) Procedures for selecting sampling locations;

(C) Analytical procedures;

(D) Chain of custody control;

(E) Procedures for establishing background values;

(F) Statistical methods for interpreting results; and

(G) A recommendation for selecting other waste constituents to be monitored in lieu of or in addition to the hazardous constituents in the waste.

(3) A description of how the treatment area will be designed, constructed, and maintained in order to meet the requirements of rule 340-115-200, including:

(a) Control of run-on and run-off including the management of associated control systems; and

(b) Control of wind dispersal of particulate matter.

(4) A description of procedures for handling incompatible, ignitable, reactive or volatile wastes and the means of compliance with rule 340-115-310.

(5) A description of the vegetative cover to be applied to closed

portions of the facility, and a plan for maintaining the cover during the post-closure care period, as required by rules 340-115-510 and -600. This information should be included in the closure and post-closure plans required by rules 340-108-110 and -310.

I. Landfills

For facilities that dispose of hazardous waste in landfills, background information, a fee, and a demonstration of compliance with the construction and operating standards specified in Division 116, including:

- (1) A detailed report with supporting information justifying the necessity for the disposal site as proposed.
- (2) A geologist's report indicating the subsurface land formation, location of groundwater resources and directions of the flows thereof, and the geologist's opinion relating to the possibility of contamination of such water resources.
- (3) A nonrefundable fee of \$5,000 which shall be continuously appropriated to the Department for administrative expenses.
- (4) A list of the hazardous wastes to be disposed.
- (5) Detailed plans describing how the landfill is designed, constructed and maintained to meet the requirements of rule 340-116-100, including:
 - (a) The liner and leachate collection and removal system (except for an existing portion of a landfill). If an exemption from the requirements for the liner and/or the leachate collection and removal system is sought as provided by rule 340-116-150, submit detailed engineering and hydrogeologic plans, as appropriate, describing alternate design and operating practices that will, in conjunction with location conditions, prevent the migration of any hazardous constituents into groundwater or surface water at any future time;
 - (b) Control of run-on and run-off including the management of associated control systems; and
 - (c) Control of wind dispersal of particulate matter.
- (6) If an exemption from Division 107 is sought as provided by rule 340-116-160, detailed plans explaining the location of the saturated zone in relation to the landfill, the design of a doubly lined system that incorporates a leak detection system between the liners, and a leachate collection and removal system above the liners.
- (7) A description of procedures for handling incompatible, ignitable, reactive or volatile wastes and the means of compliance with rule 340-116-200.
- (8) If liquid wastes or waste containing free liquids will be landfilled, an explanation of the means of compliance with rule 340-116-220.
- (9) If containers will be landfilled, an explanation of the means of compliance with rule 340-116-230.
- (10) Detailed plans describing the final cover which will be applied to each landfill at closure in accordance with rule 340-116-300, and a description of how each landfill will be maintained and monitored after closure in accordance with rule 340-116-400. This information should be included in the closure and post-closure plans required by rules 340-108-110 and -310.

J. Incinerators

For facilities that incinerate hazardous waste, a demonstration of compliance with the performance and operating standards specified in Division 117. Pursuant to rule 340-117-200, this may be done by means of either a trial burn or by the submission of analytical data demonstrating the effectiveness of the incinerator.

I. Trial Burn

The Department may require a trial burn for a new (or newly modified) incinerator to determine its operational readiness or for the burning of a new waste in an existing incinerator.

The information submitted by the owner or operator shall include:

- (1) A detailed engineering description of the incinerator, including:
 - (a) Manufacturer's name and model number;
 - (b) Type;
 - (c) Linear dimensions of incinerator unit including cross sectional area of combustion chamber;
 - (d) Description of auxiliary fuel system (type/feed);
 - (e) Capacity of prime mover;
 - (f) Description of automatic waste feed cutoff system;
 - (g) Stack gas monitoring and pollution control monitoring system;
 - (h) Nozzle and burner design;
 - (i) Construction materials;
 - (j) Location and description of temperature, pressure and flow indicating devices and control devices; and
 - (k) Other relevant design features.
- (2) An outline of the conditions necessary to operate in compliance with rule 340-117-100, including, at a minimum, restrictions on waste constituents, waste feed rates and a consideration of the factors identified in rule 340-117-230.
- (3) A trial burn plan, including:
 - (a) A complete analysis of each waste or mixture of wastes to be burned, including:
 - (A) Heat value of the waste in the form and composition in which it will be burned;
 - (B) Viscosity or description of physical form of the waste; and
 - (C) The identification and quantification of any hazardous constituents listed in Appendix 101.3 which are present in the waste to be burned, except that the owner or operator need not analyze for those hazardous constituents which would reasonably not be expected to be found in the waste. The hazardous constituents excluded from analysis must be identified and the basis for their exclusion stated. The waste analysis shall rely on analytical techniques specified in Test Methods for Evaluating Solid Waste, Second Ed., July 1982 (SW-846) or their equivalent;
 - (b) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis;
 - (c) A detailed test schedule for each waste for which the trial burn is planned including date(s), duration, quantity of waste to be

burned, and other relevant factors;

(d) A detailed test protocol, including, for each waste identified, the ranges of temperature, waste feed rate, air feed rate, use of auxiliary fuel, and any other relevant parameters that will be varied to affect the destruction and removal efficiency of the incinerator;

(e) A description of, and planned operating conditions for, any emission control equipment which will be used;

(f) Procedures for rapidly stopping waste feed, shutting down the incinerator, and controlling emissions in the event of an equipment malfunction; and

(g) Such other relevant information as may be requested by the Department.

(4) Those principal organic hazardous constituents (POHCs), subject to Department approval, for which destruction and removal efficiencies must be calculated during the trial burn. This will be based on an estimate of the difficulty of incinerating the hazardous constituents; the concentration in the waste feed; and, for wastes listed in rule 340-101-200, the hazardous waste constituents identified in Appendix 101.5.

(5) Within 90 days after each approved trial burn, the owner or operator shall submit to the Department:

(a) The results of the following determinations:

(A) A quantitative analysis of the trial POHCs in the waste feed to the incinerator;

(B) A quantitative analysis of the exhaust gas for the concentration and mass emissions of the trial burn POHCs, oxygen and hydrogen chloride;

(C) A quantitative analysis of the scrubber water (if any), ash residues and other residues, for the trial POHCs;

(D) A computation of destruction and removal efficiency (DRE), in accordance with the formula specified in rule 340-117-100(1)(a);

(E) If the HCl emission rate exceeds 4 lb/hr, a computation of the HCl removal efficiency, in accordance with rule 340-117-100(1)(b);

(F) A computation of particulate emissions, in accordance with rule 340-117-100(1)(c);

(G) An identification of sources of fugitive emissions and their means of control;

(H) A measurement of average, maximum, and minimum temperatures, and combustion gas velocity;

(I) A continuous measurement of CO in the exhaust gas; and

(J) Such other information as may be specified to ensure that the trial burn will determine compliance with the performance standard of rule 340-117-100 and to establish the operating conditions of rule 340-117-230 necessary to meet that performance standard.

(b) All other data collected during the burn.

(c) A certification by the owner or operator that the trial burn has been carried out in accordance with the trial burn plan.

II. Analytical Procedure

The Department may approve a license application for a new incinerator or the burning of a new waste in an existing incinerator without a trial burn if it finds that because of the similarity of wastes and incinerators, data from other trial burns are adequate to

specify the operating conditions that will ensure that the performance standards are met by the incinerator.

The information submitted by the owner or operator shall include:

(1) A detailed engineering description of the incinerator, including:

- (a) Manufacturer's name and model number;
- (b) Type;
- (c) Linear dimensions of incinerator unit including cross sectional area of combustion chamber;
- (d) Description of auxiliary fuel system (type/feed);
- (e) Capacity of prime mover;
- (f) Description of automatic waste feed cutoff system;
- (g) Stack gas monitoring and pollution control monitoring system;
- (h) Nozzle and burner design;
- (i) Construction materials;
- (j) Location and description of temperature, pressure and flow indicating devices and control devices; and
- (k) Other relevant design features.

(2) A complete analysis of each waste or mixture of wastes to be burned, including:

- (a) Heat value of the waste in the form and composition in which it will be burned;
- (b) Viscosity or description of physical form of the waste; and
- (c) The identification and quantification of any hazardous organic constituents listed in Appendix 101.3 which are present in the waste to be burned, except that the owner or operator need not analyze for those hazardous constituents which would reasonably not be expected to be found in the waste. The hazardous constituents excluded from analysis must be identified and the basis for their exclusion stated. The waste analysis shall rely on analytical techniques specified in Test Methods for Evaluating Solid Waste, Second Ed., July 1982 (SW-846) or their equivalent; and

(d) The identification and quantification of those hazardous constituents in the waste which may be designated as principal organic hazardous constituents (POHCs) based on data submitted from other trial or operational burns which demonstrate compliance with the performance standard of rule 340-117-100.

(3) A description and analysis of the waste to be burned compared with wastes for which data from operational or trial burns are provided to support the contention that a trial burn is not needed. The analysis should include those items listed in section (2) of this submission with emphasis on the POHCs which the owner or operator has identified in the wastes for which a permit is sought, and the differences from the POHCs in the waste for which burn data are provided.

(4) The design and operating conditions of the incinerator to be used, compared with that for which comparative burn data are available.

(5) A description of the results submitted from any previously conducted trial burns including:

- (a) Sampling and analysis techniques used to calculate compliance with the performance standard of rule 340-117-100;
- (b) Methods and results of monitoring temperatures, waste feed rates, carbon monoxide, and an appropriate indicator of combustion gas

velocity (including a statement concerning the precision and accuracy of this measurement);

(c) Quantitative analyses of the trial POHCs in waste feeds to the incinerator;

(d) Quantitative analyses of the exhaust gas for the concentration and mass emissions of the trial burns POHCs, oxygen and hydrogen chloride;

(e) Quantitative analyses of the scrubber water (if any), ash residues and other residues, for the trial POHCs;

(f) Computations of destruction and removal efficiency (DRE), in accordance with the formula specified in rule 340-117-100(1)(a);

(g) If the HCl emission rates exceed 4 lb/hr, computations of the HCl removal efficiency, in accordance with rule 340-117-100(1)(b);

(h) Computation of particulate emissions, in accordance with rule 340-117-100(1)(c);

(i) An identification of sources of fugitive emissions and their means of control;

(j) A measurement of average, maximum, and minimum temperatures, and combustion gas velocity;

(k) Such other information as may be specified to ensure that the submitted data will determine compliance with the performance standard of rule 340-117-100 and to establish the operating conditions of rule 340-117-230 necessary to meet that performance standard.

(6) The expected incinerator operation information to demonstrate compliance with rules 340-117-100 and -230, including:

(a) Expected carbon monoxide level in the stack exhaust gas;

(b) Waste feed rate;

(c) Combustion zone temperature;

(d) Air feed rate;

(e) Expected stack gas volume, flow rate and temperature;

(f) Computed residence time for waste in the combustion zone;

(g) Expected hydrochloric acid removal efficiency;

(h) Expected fugitive emissions and their control procedures; and

(i) Proposed waste feed cut-off limits based on the identified significant operating parameters.

(7) Such supplemental information as may be requested by the Department.

Appendix 120.2: Fact Sheet

A fact sheet shall be prepared by the Department for every draft license for a hazardous waste management facility. The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft license.

The fact sheet shall include, when applicable:

(1) A brief description of the facility which is the subject of the draft license;

(2) The type and quantity of wastes which are proposed to be or are being treated, stored, or disposed;

(3) A brief summary of the basis for the draft permit conditions including references to applicable statutes or rules.

(4) Reasons why any requested variances or alternatives to required standards do or do not appear justified;

(5) A description of the procedures for reaching a final decision on the draft license including:

(a) The beginning and ending dates of the comment period and the address where comments should be sent;

(b) Procedure for requesting a hearing and the nature of that hearing; and

(c) Any other procedures by which the public may participate in the final decision; and

(6) Name and telephone number of a person to contact for additional information.

Appendix 120.3: Public Notices

A. All public notices shall contain the following information:

- (1) Name and address of the DEQ office processing the license application for which notice is being given;
- (2) Name and address of the licensee or license applicant and, if different, of the facility regulated by the license;
- (3) A brief description of the business conducted at the facility described in the license application;
- (4) Name, address and telephone number of a person to contact for additional information, including copies of the draft license, fact sheet and application;
- (5) A brief description of the comment procedures, the ending date of the comment period, a statement of the procedure to request a hearing (unless a hearing has already been scheduled), and how the public may participate in the final license decision; and
- (6) Any additional information considered relevant or proper.

B. Public notices of a hearing shall also contain the following information:

- (1) Reference to the date of previous public notices relating to the license, if applicable;
- (2) Date, time and place of the hearing; and
- (3) A brief description of the nature and purpose of the hearing, including applicable rules and procedures.

Appendix 120.4: Response to Comments

A response to comments shall be prepared for every license issued for a hazardous waste management facility which shall:

- (1) Specify which provisions, if any, of the draft license have been changed in the final license decision, and the reasons for the change; and
- (2) Briefly describe and respond to significant comments on the draft license raised during the public comment period including the public hearing(s).

Appendix 120.5: Information Required to Burn PCB-Contaminated Liquid in a Boiler or Industrial Furnace

The information required by this appendix shall be submitted by an owner or operator seeking authorization to burn PCB-contaminated liquid ($50 \leq \text{PCB} < 500$ ppm) in a boiler or industrial furnace pursuant to the requirements of Appendix 117.1.

(1) The name and address of the owner or operator of the boiler or industrial furnace and the address of the facility;

(2) The boiler or industrial furnace rating in units of Btu/hour;

(3) The carbon monoxide concentration and the excess oxygen percentage in the stack emissions when the boiler or industrial furnace is operated in a manner similar to the manner in which it will be operated when PCB-contaminated liquid is burned;

(4) The type of equipment, apparatus, and procedures to be used to control the feed of PCB-contaminated liquid to the boiler or industrial furnace and to monitor and record the carbon monoxide concentration and excess oxygen percentage in the stack;

(5) The type of PCB-contaminated liquid to be burned (e.g., hydraulic fluid, contaminated fuel oil, heat transfer fluid, etc.);

(6) The concentration of PCBs and other chlorinated hydrocarbons in the liquid and the results of analyses using the American Society of Testing and Materials (ASTM) methods as follows: carbon and hydrogen content using ASTM D3178-73 (reapproved 1979), nitrogen content using ASTM E258-67, sulfur content using ASTM D2784-80, D1266-80, or D129-64, chlorine content using ASTM D808-81, water and sediment content using either ASTM D2709-68 or D1796-68, ash content using D482-80, calorific value using ASTM D240-76 (reapproved 1980), carbon residue using either ASTM D2158-80 or D524-81, and flash point using ASTM D93-80.

(7) The quantity of PCB-contaminated liquid estimated to be burned in a 30-day period;

(8) An explanation of the procedures to be followed to ensure that burning the PCB-contaminated liquid will not adversely affect the operation of the boiler such that combustion efficiency will decrease; and

(9) Other information as may be requested by the Department.

DIVISION 121: Reserved

DIVISION 122
HAZARDOUS WASTE MANAGEMENT
Management Facilities: Licenses-by-Rule

Purpose

340-122-010 The purpose of this division is to specify the minimum standards for specified hazardous waste management facilities to qualify for a license-by-rule.

Authority

340-122-020 The rules of this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-122-030 The terms used in this division are defined by rule 340-100-030.

Applicability

340-122-040 The following shall be deemed to have a license-by-rule if the conditions listed in this division are met:

(1) Persons having a permit for ocean disposal issued under the Marine Protection, Research and Sanctuaries Act (40 CFR Part 220);

NOTE: Treatment or storage prior to loading onto a vessel is subject to a license.

(2) Persons having a permit for underground injection issued under 40 CFR Part 144;

NOTE: Treatment or storage prior to injection is subject to a license.

(3) Publicly owned treatment works having an NPDES or WPCF permit that only accept wastes meeting federal, State and local sewage pretreatment requirements;

(4) Generators who own or operate an elementary neutralization or process wastewater treatment facility for the on-site treatment of their own hazardous waste, except that such generators may accept off-site waste for treatment provided the annual amount does not exceed 25% of their own on-site treated waste; and

NOTE: Any neutralization done in elementary neutralization facilities which are transport vehicles, vessels or containers used to transport the waste after neutralization must be completed while the facility remains stationary and before transport of the neutralized waste begins.

(5) Persons who recycle spent lead-acid batteries.

NOTE: Persons who generate, transport, or store but do not recycle batteries are not subject to the hazardous waste rules.

Denial or Withdrawal of License-by-Rule Status

340-122-050 The Department may deny or terminate eligibility for a license-by-rule and require an owner and operator of a specific facility to apply for and obtain an individual license, if:

(1) The owner or operator violates any conditions specified in this division;

(2) The technology used is not appropriate to the waste being managed (i.e., the Department will generally require the application of best practicable treatment standards);

(3) The owner or operator is conducting other activities which require him to obtain an individual license; or

(4) The Department determines that the requirements of this division are not sufficient to protect human health or the environment and that additional requirements under Divisions 106-120 are required to provide such protection.

General Facility Requirements

340-122-100 All license-by-rule facilities shall comply with the following rules:

- (1) 340-106-060(1)(a) and (2): Identification;
- (2) 340-106-200: Security;
- (3) 340-106-250 and -260: Inspection;
- (4) 340-106-300 to -350: Preparedness and Prevention;
- (5) 340-106-400: Contingency Plan;
- (6) 340-106-450 to -470: Emergency Procedures;
- (7) 340-106-500 to -520: Manifest System (as applicable);
- (8) 340-106-550(1) and -560: Operating Record; and
- (9) 340-106-600(1): Manifest Waste Report (as applicable).

(10) At closure, the owner or operator shall remove or decontaminate all waste residues, equipment and structures contaminated by hazardous waste. Removed substances shall be managed in accordance with rule 340-101-030(6)(a).

Specific Facility Requirements

340-122-200 Generators who own or operate an elementary neutralization or process wastewater treatment facility shall, within 45 days after the end of each calendar year, submit to the Department an annual operating report, including:

- (1) Period covered by the report;
- (2) EPA identification number, name, address, and phone number of the facility;
- (3) For all hazardous waste treated or stored during the reporting period:
 - (a) Dates of waste treatment or storage (specify if continuous or intermittent);
 - (b) Waste description, estimated quantity, physical state, and classification;
 - (c) The method of treatment or storage; and
 - (d) Any other information pertinent to the operation of the facility.

340-122-220 Persons who recycle spent lead-acid batteries shall comply with the following additional rules:

- (1) 340-106-600(3): Imported Waste; and
- (2) Divisions 108 and 111 to 114: Facility Construction and Operating Standards (as applicable).

DIVISION 123: Reserved

DIVISION 124
HAZARDOUS WASTE MANAGEMENT
Spills and Other Incidents

Purpose

340-124-010 The purpose of this division is to specify the emergency procedures required to respond to a spill or other incident involving a hazardous waste or hazardous substance.

NOTE: Oil spilled in an area that may allow it to reach public waters shall be managed in accordance with OAR Chapter 340, Division 47.

Authority

340-124-020 The rules in this division are adopted pursuant to ORS Chapters 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-124-030 As used in this division unless otherwise specified:

(1) "Disposal" means the discharge, deposit, injection, dumping, spilling, leaking or placing of any hazardous waste or hazardous substance into or on any land or water so that the hazardous waste or hazardous substance may enter the environment or be emitted into the air or discharged into any waters of the State.

(2) "Hazardous substance" means any substance intended for use which may also be identified as hazardous pursuant to Division 101.

(3) "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 subsection (a), (b) or (c) of this section 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 subsections (a) and (b) of this definition.

NOTE: Specific hazardous wastes are identified in Division 101.

(4) "Oil" means oil, including gasoline, crude oil, fuel oil, diesel oil, lubricating oil, sludge, oil refuse and any other petroleum related product.

(5) "Other incident" includes but is not limited to the actual or imminent possibility of a dangerous uncontrolled reaction, the release of leachate, noxious gases or odors, fires, explosion or other discharge of which may endanger public health or the environment.

(6) "Modified Spill Prevention Control and Countermeasure (SPCC) Plan" means the plan to prevent the spill of oil from a non-transportation-related facility that has been modified to include those hazardous substances and hazardous wastes handled at the facility.

(7) "Spill" means the accidental spilling, leaking, pumping, pouring, emitting or dumping of hazardous wastes or hazardous substances into or on any land or water.

(8) "Waters of the State" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the State or within its jurisdiction.

Applicability

340-124-040 (1) The rules of this division apply to all persons whose actions cause or allow to be caused a hazardous waste or hazardous substance spill or other incident; except that

(2) Spills and other incidents occurring in a hazardous waste treatment, storage or disposal facility shall be managed in accordance with the procedures set forth in Division 106.

Liability

340-124-050 (1) Any person having the care, custody or control of a hazardous waste or a hazardous substance, who causes or permits the disposal of that waste or substance in violation of law or otherwise than as reasonably intended for normal use or handling of such waste or substance, including but not limited to spills or other incidents, shall be liable for the damages to person or property, public or private, caused by the disposal.

(2) It shall be the obligation of such person to collect, remove or treat the waste or substance immediately, subject to such direction as the Department may give.

(3) If such person fails to collect, remove or treat the waste or substance when under an obligation to do so, the Department will take action as is necessary to collect, remove or treat the waste or substance.

(4) The Department will keep a record of all necessary expenses incurred in carrying out any cleanup projects or activities, including reasonable charges for services performed and equipment and materials utilized.

(5) Any person who fails to collect, remove or treat the waste or substance immediately, when under an obligation to do so, shall be responsible for the necessary expenses incurred by the State in carrying out a cleanup project or activity authorized by the Department.

(6) If the amount of State-incurred expenses are not paid to the Department within 15 days after receipt of notice that expenses are due and owing, the Attorney General, at the request of the Director, shall bring an action in the name of the State of Oregon in any court of competent jurisdiction to recover the amount specified in the final order of the Department.

Emergency Action

340-124-100 In the event of a spill or other incident, the person having the care, custody, or control of the hazardous waste or hazardous substance shall take the following actions, as appropriate:

(1) Immediately implement the site modified SPCC plan or other applicable contingency plan.

NOTE: Generators storing hazardous waste are required to have a contingency plan prepared in accordance with rule 340-102-160(1)(c).

(2) If a contingency plan is not required or available, immediately take the following actions in the order listed:

(a) Activate alarms or otherwise warn persons in the immediate area;

(b) Undertake every reasonable method to contain the hazardous substance or hazardous waste;

(c) Report the spill or other incident to the Oregon Accident Response System (telephone 1-800-452-0311) if it exceeds the following reportable quantity (in the event a substance or waste falls into more than one category, the lower quantity shall be reported):

<u>Substance or Waste Type</u>	<u>Reportable Quantity (lbs/gal)</u>
Ignitable, rule 340-101-100	200/20
Corrosive, rule 340-101-110	200/20
Reactive, rule 340-101-120	200/20
Pesticide, rule 340-101-130	10/1
EP Toxic, rule 340-101-140	10/1
Listed, rule 340-101-200	10/1
Listed, rule 340-101-210	2/0.2
Listed, rule 340-101-220	10/1
PCB, rule 340-101-230	10/1

NOTE: The reportable quantities are not meant to include those de minimus losses that normally occur from the use of commercial products or raw materials.

(d) The spill or other incident need not be reported if:

(A) It occurs on private property and is known to the owner of the property (or his representative);

(B) It occurs on an impervious surface where it is fully contained; and

(C) It will be collected, removed or treated in a manner that will not allow it to enter the environment.

(e) If a transporter: Also report spills to the National Response Center (1-800-424-8802) as required by 49 CFR 171.15; and

(f) Undertake, in the most practicable manner, the collection, removal or treatment of the hazardous substance or hazardous waste by means that will minimize damage to the environment. The Department may, in any case, evaluate the action taken and may require additional action to complete the cleanup and disposal.

Cleanup Report

340-124-150 The Department may require the person assuming responsibility for a spill or other incident to submit a written report within 15 days describing all aspects of the spill and steps taken to prevent a recurrence.

NOTE: Transporters are required by the Public Utility Commissioner to file a Hazardous Materials Incident Report (DOT Form F5800.0) within 15 days after a spill. A copy of this report may be sent to the Department in lieu of the report required by this rule.

DIVISION 125
HAZARDOUS WASTE MANAGEMENT
Pesticide Users

Purpose

340-125-010 The purpose of this division is to specify procedures for managing wastes produced by the use of pesticides.

Authority

340-125-020 The rules of this division are adopted pursuant to ORS Chapter 468, including 468.020; 459, including 459.440; and 183.

Definitions

340-125-030 As used in these rules unless otherwise specified:

(1) "Aeration" means a specific treatment for decontaminating an empty volatile substance container consisting of removing the closure and placing the container in an inverted position for at least 24 hours.

(2) "Beneficial use" means the return of hazardous waste without processing to the economic mainstream as a substitute for raw materials in an industrial process or as a commercial product (e.g., melting a container for scrap metal, or reuse of it by the pesticide manufacturer, distributor or retailer).

(3) "Department" means the Department of Environmental Quality.

(4) "Domestic use" means use in or around homes by the homeowner.

(5) "Empty container" means a container from which:

(a) All the contents have been removed that can be removed using the practices commonly employed to remove materials from that type of container; and

(b)(A) No more than one inch of residue remains on the bottom of the container; or

(B) No more than 3% of the total capacity of the container remains in the container if the container is less than or equal to 110 gallons in size; or

(C) No more than 0.3% of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size; or

(D) If the material is a compressed gas, the pressure in the container is atmospheric.

(6) "Jet rinsing" means a specific treatment for an empty container using the following procedure:

(a) A nozzle is inserted into the container, or the empty container is inverted over a nozzle such that all interior surfaces of the container can be rinsed; and

(b) The container is thoroughly rinsed using an appropriate solvent.

(7) "Multiple rinsing" means a specific treatment for an empty container repeating the following procedure a minimum of three times:

(a) An appropriate solvent is placed in the container in an amount equal to at least 10% of the container volume; and

(b) The container is agitated to rinse all interior surfaces; and

(c) The container is opened and drained, allowing at least 30 seconds

after drips start.

(8) "Pesticide" means 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 defoliant, desiccants, fungicides, herbicides, insecticides, and nematocides as defined by ORS 634.006.

(9) "Pesticide clean-up" means discarded, useless or unwanted materials or residues produced by the use of pesticides including, but not limited to spray mixtures, container rinsings and pesticide equipment washings.

(10) "Pesticide equipment" means any equipment, machinery or device used in the preparation for use or application of pesticides, including but not limited to aircraft, ground spraying equipment, hoppers, tanks, booms and hoses.

(11) "Public-use airport" means an airport open to the flying public which may or may not be attended or have service available.

(12) "Recycle" means the processing of a hazardous waste so as to return it to the economic mainstream as a substitute for raw materials in an industrial process or as a commercial product (e.g., drum reconditioning).

(13) "Volatile hazardous waste" means any hazardous waste which contains volatile organic components in excess of 3% as determined by a method approved by the Department. For purposes of these rules, all fumigants are considered to be volatile.

Applicability

340-125-040 (1) The rules of this division apply to any persons who produce pesticide clean-up or empty pesticide containers from other than domestic use. Waste pesticide clean-up or empty pesticide containers produced from domestic use are not regulated as hazardous waste.

(2) Waste commercial pesticide formulations or products shall be managed as hazardous waste pursuant to Divisions 100 to 120.

Pesticide Clean-up Management

340-125-100 A person producing pesticide clean-up at a public-use airport, pesticide dealership or other permanent base of operation, shall manage the clean-up in a facility having a Water Pollution Control Facility (WPCF) permit issued pursuant to OAR Chapter 340, Division 14, or as otherwise authorized by the Department. Such management shall be in conformance with the following performance standards:

(1) Containment of the waste by any one or combination of: physical means (e.g., natural or man-made liners), chemical means (e.g., adsorption-absorption layers), or other equivalent means;

(2) Detoxification of the waste by any one or combination of: physical means (e.g., solar radiation), chemical means (e.g., hydrolysis), biological means (e.g., microbial degradation), or other equivalent means;

(3) Reduction of the volume of the waste by any one or combination of: evaporation, evapo-transpiration, use of the waste for new product makeup, or other equivalent means; and

(4) Protection of groundwater and surface waters by any one or combination of: system design, construction materials, or a groundwater monitoring program.

340-125-110 A person producing pesticide clean-up at a temporary base of operation may manage such waste at a permitted facility or spray the waste on the ground, provided:

(1) The waste is sprayed under pressure through a nozzle which is moving at a sufficient rate of speed so as not to saturate the ground with waste;

(2) The person doing the spraying owns or controls the management of the ground, or receives permission from the manager, owner, or controller of the ground;

(3) The spray site location will not endanger surface water or groundwater, or pose a hazard to humans, wildlife (game and non-game animals) or domestic animals; and

(4) If applied to agriculture land, the pesticide deposit will not result in excessive residual amounts or prohibited types of residues in current or subsequent crops.

Empty Container Management

340-125-200 (1) Empty containers are hazardous waste if they were used in the transportation, storage, or use of a pesticide.

(2) Empty rigid pesticide containers, including but not limited to cans, pails, buckets or drums constructed of metal, plastic, glass, or fiber may be managed as ordinary solid waste if they are decontaminated, verified, and, if disposed, altered, as follows:

(a) Decontamination consist of removing any residual by:

(A) Jet or multiple rinsing;

(B) Aeration of volatile substances;

(C) Chemical washing methods such as those used to recondition metal drums;

(D) Removing the inner liner that prevented contact of the hazardous substance or hazardous waste with the container and managing the liner as hazardous waste; or

(E) Other methods that have been shown in the scientific literature, or by generator tests, to achieve equivalent removal.

(b) Verification consists of observing no residue on the interior surface of the container, or no turbidity (less than 5 Nephelometric turbidity units) in a sample rinse when a diluent, which does not solubilize the residue, is placed in the container to fill 5% of its volume and agitated for 30 seconds.

(c) Alteration consists of puncturing or removing both ends and crushing the container except that:

(A) 55-gallon or larger containers shall be punctured or have their ends removed but need not be crushed;

(B) Containers to be beneficially used or recycled need not be altered if alteration would interfere with the end use of the resultant commercial product; and

(C) Gas cylinders shall be altered by removing the closure valve or valve stem to ensure venting.

(3) Empty non-rigid pesticide containers, including paper, paper-laminated and paper-laminated foil bags, may be managed as ordinary solid waste if they are disposed as follows:

(a) In a permitted solid waste landfill; or

(b) Burned in an incinerator or boiler which has been permitted by the Department; or

(c) Open burned in less than 50 pound lots on-site on the day of

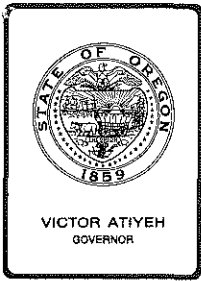
generation or as soon thereafter as feasible provided the site is not a public-use airport, distributorship or other permanent base of operation and the burning does not emit dense smoke, noxious odor or creates a public nuisance. Open burning shall be in compliance with OAR Chapter 340, Division 23, local fire district requirements, and in such a manner as to protect public health and the environment. The ash and foil liners must be buried after burning.

(4) Farmers may bury empty non-rigid or decontaminated rigid pesticide containers on their own property provided:

(a) The containers were generated from their own use; and

(b) The burial site is on flat ground, not in a swale, and at least 500 feet from surface water or any well.

(5) No person shall use or provide for use empty or decontaminated pesticide containers to store food, fiber or water intended for human or animal consumption.



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: Acting Director
Subject: Agenda Item No. F, November 18, 1983, EQC Meeting

Request for Authorization to Hold a Public Hearing on Proposed Redesignation of the Medford-Ashland AQMA as Attainment for Ozone, and Proposed Revision of the State Implementation Plan.

BACKGROUND

The Clean Air Act of 1977 required States to submit plans to demonstrate how they will attain and maintain compliance with national ambient air standards for those areas designated as "nonattainment". The Medford-Ashland Air Quality Maintenance Area (AQMA) was designated nonattainment for ozone in January 1978 based on measured violations of the ambient air quality standard for ozone in 1976 and 1977.

The Environmental Quality Commission adopted an ozone control strategy for the Medford-Ashland AQMA in June 1979. This strategy was approved by the Environmental Protection Agency (EPA) in June 1980.

The Medford-Ashland ozone strategy projected attainment of the ambient ozone standard by the end of 1982. Ambient ozone levels in the Medford-Ashland area have improved significantly since 1976. The Medford-Ashland area has been in continuous compliance with the ambient ozone standard since 1979. Compliance is also projected for future years, even during healthy economic conditions. It appears appropriate to redesignate the Medford-Ashland area as attainment for ozone.

Authority for the Commission to Act

ORS Chapter 468.020, gives the Commission authority to adopt necessary rules and standards; ORS 468.305 authorizes the Commission to prepare and develop a comprehensive plan for air pollution control.

ALTERNATIVES AND EVALUATION

Ozone is an odorless and potentially toxic gas associated with photochemical smog. It is formed by photochemical reactions in the atmosphere between oxides of nitrogen and volatile organic compounds (VOC) in the presence of direct sunlight and warm temperatures. Reducing VOC emissions is the accepted method of lowering ozone levels.

VOC Emission Trend

VOC emissions from stationary and mobile sources in the Medford-Ashland area have decreased substantially since the 1977 base year. VOC emission inventories are summarized in Table 1.

Table 1. Medford-Ashland AQMA Volatile Organic Compound Emission Inventories.

Source Category	Volatile Organic Compounds Emissions (Tons Per Year)				
	1977	1980	1981	1982	1987 ^a
Stationary Sources	7359	6551	7374	5810	7338
Mobile Sources	<u>6004</u>	<u>4136</u>	<u>3505</u>	<u>2445</u>	<u>2036</u>
Total	13363	10687	10879	8255	9374

a Projected.

Highway motor vehicle VOC emissions have decreased each year due to the Federal Motor Vehicle Emission Control Program (Federal tailpipe program). In addition, traffic volumes have decreased in the Medford area over the 1977-1982 period by 11%.

Stationary source emissions were initially projected to decrease by 9% over the 1977-1982 period, based on new control requirements; the actual decrease was 21%. The additional emission decrease is due to reduced commercial and industrial activity as a result of the current economic recession. In addition, the emission control system on the 3M paper coating plant was completed near the end of 1982. The 3M plant is the largest stationary VOC source in the Medford area; the new control system is expected to reduce VOC emissions from the 3M plant by about 65%.

The VOC emission trend is outlined in Figure 1. The reasonable further progress (RFP) line in Figure 1 is the emission projection made in 1979. The emission points in Figure 1 represent the annual total VOC emissions from Table 1.

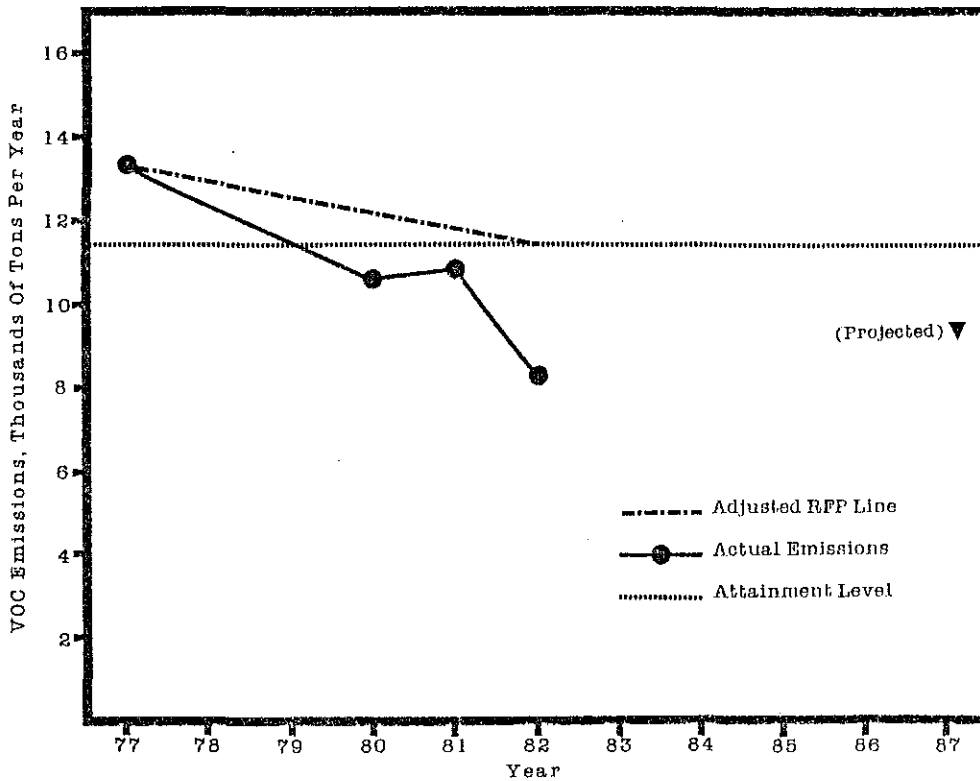


Figure 1. VOC Emission Trend in the Medford-Ashland AQMA.

Ambient Ozone Trend

Ambient ozone levels in the Medford-Ashland area are summarized in Table 2. The Medford-Ashland area has been in compliance with the 0.12 ppm ozone standard continuously since 1979.

Table 2. Summary of Ambient Ozone Levels in the Medford-Ashland AQMA From 1976 to 1982.

Year	Ozone Levels (ppm, hourly average) ^a		Number of Days Over 0.12 ppm
	Maximum	Second Highest	
1976	0.18	0.16	9
1977	0.14	0.13	3
1978	0.13	0.12	2
1979	0.09	0.09	0
1980	0.11	0.09	0
1981	0.11	0.11	0
1982	0.11	0.09	0

a Pre-1979 ozone levels were measured with a different calibration method. The pre-1979 levels should be reduced by 20-25% for comparison with 1979 and later values.

VOC Growth Cushion

The Medford-Ashland ozone strategy adopted in 1979 anticipated that the VOC emissions would be reduced below the level required for attainment of the ozone standard by 1982. In addition, the projected VOC emission reductions were expected to provide a VOC growth cushion of about 1200 tons per year, or about 3000 kilograms per day (kg/day), by 1987. The Department has reevaluated the Medford-Ashland ozone strategy based on ambient ozone trends, VOC emission trends, and the most current EPA modeling guidance.

The updated analysis indicates that the available growth cushion is larger than originally anticipated. The revised growth cushion is projected to be about 1900 kg/day in 1984, increasing to 5000 kg/day by 1987.

Redesignation Alternatives

There appear to be at least three alternatives regarding the ozone status of the Medford-Ashland area. These three alternatives are:

1. The Commission could retain the ozone nonattainment status for the Medford-Ashland area and the Department could continue to administer the new source review program using the existing growth cushion;
2. The Commission could redesignate the Medford-Ashland area as attainment for ozone and the Department could continue to administer the new source review program using the updated growth cushion; or
3. The Commission could redesignate the Medford-Ashland as attainment for ozone and the Department could administer the new source review program without the growth cushion concept.

The first alternative could be challenged by the public, local government, or industry since five consecutive years of ozone monitoring indicate compliance with the ozone standard in the Medford-Ashland area. Only three years of data are required for redesignation.

Redesignation of the Medford-Ashland area, as outlined in the second and third alternatives, would make it easier and less expensive for industries with significant VOC emissions to locate or expand in the Medford-Ashland area. The significant emission rate criteria, for determining whether a new or expanded source would be subject to new source review requirements, would be 40 tons of VOC per year, rather than the current 20-ton-per-year criteria for the Medford-Ashland area. New or expanded industries would be required to provide best available control technology (BACT) rather than the more stringent lowest achievable emission rate (LAER).

The Department recommends the second alternative. Under this alternative, the Department recommends that the Commission revise the State Implementation Plan, replacing the 1979 ozone attainment strategy with a new ozone maintenance strategy for the Medford-Ashland area. The proposed revision is outlined in Attachment 2. This alternative would allow the Department to review new or modified VOC sources and insure that proposed VOC increases would not exceed the available growth cushion.

The third alternative would not identify the available VOC growth cushion in the ozone maintenance strategy. Due to the apparent sensitivity of the Medford-Ashland airshed, the Department recommends that the Commission continue a defined growth cushion in the maintenance strategy for the Medford-Ashland area.

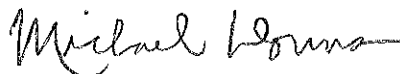
SUMMATION

1. The Medford-Ashland AQMA is currently designated as a nonattainment area for ozone.
2. The Medford-Ashland ozone strategy was adopted by the Commission in June 1979 and approved by EPA in June 1980. This strategy projected attainment of the ozone standard by the end of 1982.
3. Ozone monitoring in the Medford-Ashland area indicates that the area has been in continuous compliance with the ozone standard since 1979.
4. The Department has reevaluated the Medford-Ashland ozone strategy based on ambient ozone trends, VOC emission trends, and updated VOC emission projections. This reevaluation indicates that the Medford-Ashland area is expected to continue in compliance with the ozone standard in future years and that the VOC growth cushion will increase from 1900 kg/day in 1984 to about 5000 kg/day by 1987.
5. The Department has prepared an ozone standard maintenance strategy for the Medford-Ashland area which should insure the maintenance of the ozone standard in future years.
6. It appears appropriate to redesignate the Medford-Ashland AQMA as attainment for ozone.

ACTING DIRECTOR'S RECOMMENDATION

Based on the Summation, the Acting Director recommends that the Commission authorize a public hearing to consider:

1. The proposed redesignation of the Medford-Ashland AQMA as an attainment area for ozone; and
2. The proposed replacement of the ozone attainment strategy for the Medford-Ashland AQMA (Section 4.8 of the State Implementation Plan) with an ozone maintenance strategy as a revision to the State Clean Air Implementation Plan.



Michael J. Downs

EQC Agenda Item No. F
November 18, 1983
Page 6

- Attachments: 1. Public Hearing Notice, Statements of Need for Rulemaking,
Fiscal and Economic Impact, and Land Use Consistency.
2. Proposed Medford-Ashland AQMA Maintenance Strategy for
Ozone as a Revision to the State Implementation Plan.

AA3940
MERLYN HOUGH:a
229-6446
October 21, 1983

Oregon Department of Environmental Quality

A CHANCE TO COMMENT ON...

**Proposed Redesignation of the Medford-Ashland Area as Attainment for
Ozone and Revision of the State Clean Air Implementation Plan**

Date Prepared: October 26, 1983

Hearing Date: January 1984

Comments Due: January 1984

- WHO IS AFFECTED:** Residents, industries, and local governments of the Medford-Ashland area.
- WHAT IS PROPOSED:** The Department of Environmental Quality is proposing to amend OAR 340-20-047, the Oregon Air Quality State Implementation Plan, by revising the ozone control strategy for the Medford-Ashland Air Quality Maintenance Area, and redesignating the area as attainment for ozone.
- WHAT ARE THE HIGHLIGHTS:** Major elements of the rule change include:
- o Redesignating the Medford-Ashland area as being in compliance with the State and Federal ambient air standards for ozone.
 - o Revising the ozone strategy from an "attainment strategy" to a "maintenance strategy".
 - o Recognizing a 5000 kilogram per day growth cushion for Volatile Organic Compounds by 1987.
- 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 Merlyn Hough at 229-6446 (call toll-free, 1-800-452-4011).
- A public hearing will be held before a hearings officer at:
- (TIME) (To be determined)
(DATE) January 1984*
(PLACE) (To be determined)
- 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 1984.*

* Specific date to be determined



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.

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 January or February 1984 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.

RULEMAKING STATEMENTS

for

Proposed Redesignation of the Medford-Ashland Area as Attainment
for Ozone and Revision of the State Clean Air Implementation Plan

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 340-20-047. It is proposed under authority of ORS
Chapter 468, including Section 305 which authorizes the Environmental
Quality Commission to adopt a general comprehensive plan for air pollution
control.

Need for the Rule

The Medford-Ashland Air Quality Maintenance Area is currently designated as
a nonattainment area for ozone based on violations of the ambient air ozone
standard in 1976, 1977, and 1978. The area has been in continuous
compliance with the ozone standard since 1979 and is expected to remain in
compliance in future years.

Principal Documents Relied Upon

Clean Air Act as Amended (PL 95-95) August 1977.
EPA Control Technology Guidelines.
DEQ Updated Emission Inventories.
DEQ Ambient Monitoring Data for Ozone and Precursors.
EPA Users Manual for Kinetic Model and Ozone Isopleth Plotting Package.
EPA Guideline for Use of City-Specific EKMA in Preparing Ozone SIPs.

FISCAL AND ECONOMIC IMPACT STATEMENT:

The proposed rule change would affect industries locating or expanding in
the Medford-Ashland area. The proposed redesignation as an ozone attain-
ment area and recognition of an increased growth cushion for volatile
organic compounds (VOC) would make it easier and less expensive for
industries and small businesses with significant VOC emissions to locate or
expand in the Medford-Ashland area.

LAND USE CONSISTENCY STATEMENT:

The proposed rule appears to affect land use and appears to be consistent
with the Statewide Planning Goals.

With regard to Goal 6 (air, water, and land resources quality) the rules
are designed to enhance and preserve air quality in the affected area and
are considered consistent with the goal.

Goal 11 (public facilities and services) is deemed unaffected by the rule.
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 fashions as are 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 apparent conflict brought to our attention by local, state, or federal authorities.

AA3979

4.8.0 MEDFORD-ASHLAND AIR QUALITY MAINTENANCE AREA PLAN FOR OZONE

4.8.0.1 Introduction

The Medford-Ashland Air Quality Maintenance Area (AQMA) was designated as a nonattainment area for ozone in January 1978 based on measured exceedances of the ozone standard in 1976 and 1977. The Environmental Quality Commission adopted an ozone control strategy for the Medford-Ashland AQMA in June 1979. This strategy was approved by the Environmental Protection Agency (EPA) in June 1980.

The 1979 Medford-Ashland ozone strategy projected attainment of the ambient ozone standard by the end of 1982. Ambient ozone levels in the Medford-Ashland area have improved significantly since 1976. The Medford-Ashland area has been in continuous compliance with the ambient ozone standard since 1979.

The Medford-Ashland ozone strategy has been revised from an attainment strategy to a maintenance strategy. The maintenance strategy is designed to ensure that compliance with the ozone standard is maintained in the Medford-Ashland area in future years.

4.8.0.2 Summary

Ozone is an odorless and toxic gas associated with photochemical smog. It is formed by photochemical reactions in the atmosphere

between oxides of nitrogen and volatile organic compounds (VOC) in the presence of direct sunlight and warm temperatures. Reducing VOC emissions is the accepted method of lowering ozone levels.

VOC emissions from stationary and mobile sources in the Medford-Ashland area have decreased substantially since the 1977 base year. These VOC emission decreases have been primarily due to the following measures:

1. Highway motor vehicle VOC emissions have decreased each year due to the Federal Motor Vehicle Emission Control Program (FMVECP).
2. Stationary source VOC emissions decreased substantially from 1977 to 1983 due to new VOC control requirements for several industrial and commercial source categories.

Future VOC emission increases will be controlled as a result of the source review (NSR) and plant site emission limit (PSEL) rules. The Medford-Ashland ozone strategy provides a 2000 ton per year (about 5000 kilograms per day) VOC growth cushion by 1987. This VOC growth cushion can be used to accomodate future VOC emission increases.

4.8.1 AMBIENT AIR QUALITY

4.8.1.1 Identification of Study Area

The Medford-Ashland AQMA is located within the Bear Creek Valley of Jackson County, Oregon. It covers about 228 square miles and includes the cities of Ashland, Central Point, Eagle Point, Jacksonville, Medford, Phoenix, and Talent as shown in Figure 4.8-1. The principal industries are logging, wood products manufacturing, agriculture, and tourism.

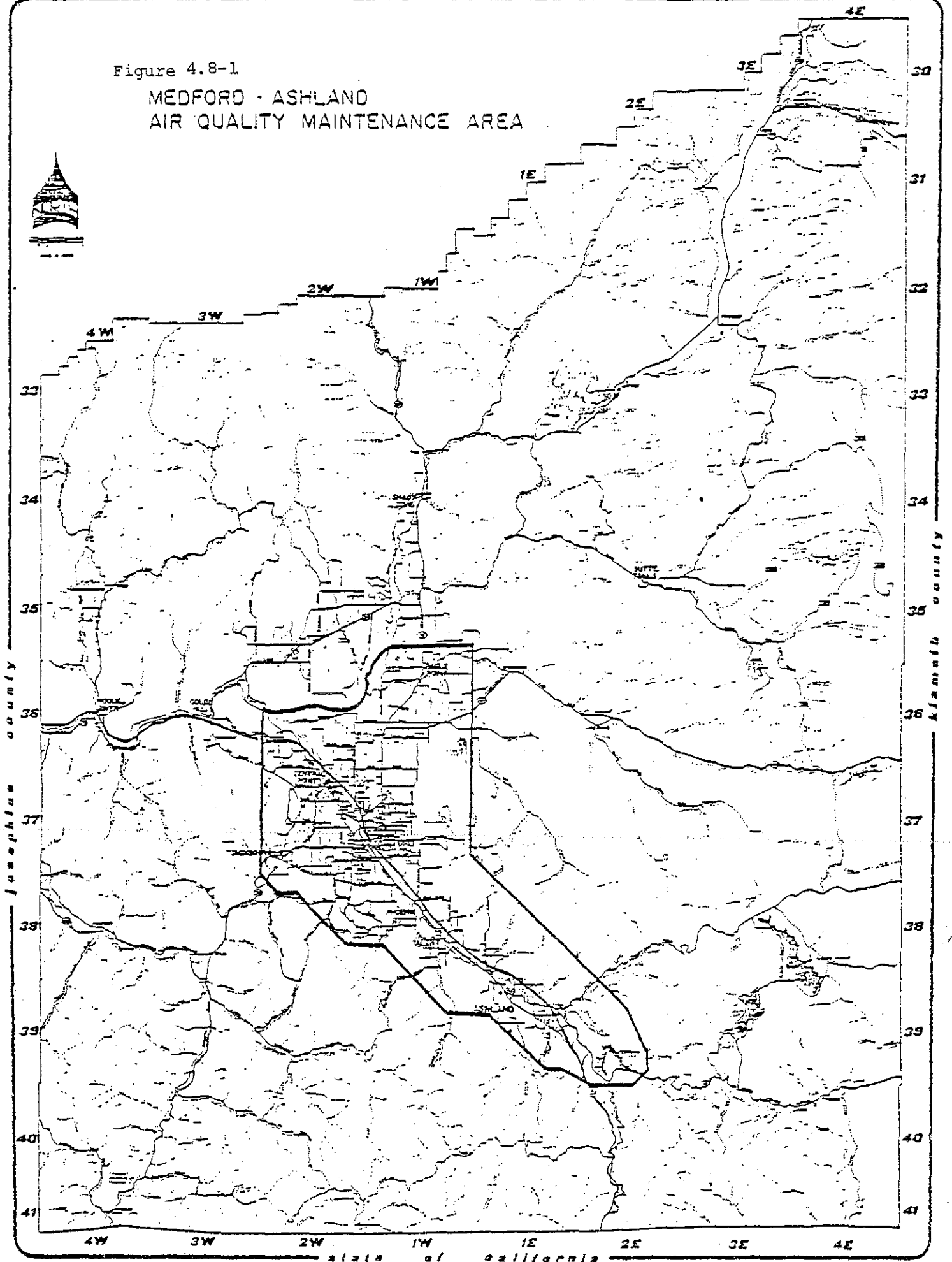
The AQMA is located at an elevation of about 1200 feet in a mountainous valley formed by the Rogue River and its tributary, Bear Creek. The surrounding mountain elevations range from 3000 to 9500 feet.

The climate of the Bear Creek Valley is moderate with marked seasonal changes. The annual average rainfall totals about 20 inches. Winds are normally very light, prevailing from the south during the winter months and from the north during the remainder of the year.

The topography of the area restricts natural ventilation of the valley. Holzworth (1971) identified the southwest interior of Oregon as one of the two areas most prone to air pollution episodes in his study of the meteorological potential for air pollution

Figure 4.8-1

MEDFORD - ASHLAND
AIR QUALITY MAINTENANCE AREA



within the continental United States. The National Weather Service issues Air Stagnation Advisories (ASAs) on about 20 days each year in the Medford-Ashland AQMA.

4.8.1.2 Ambient Monitoring Data

The background ozone site for the Medford-Ashland AQMA is located north of the AQMA on Dodge Road. The primary ozone monitor is located in Phoenix about 8 kilometers south of the central business district and about 18 kilometers south of the White City industrial area. Prior to 1982, the primary ozone monitor was located at the Bear Creek site, about 5 kilometers south of Medford.

Ambient ozone levels in the Medford-Ashland area are summarized in Table 4.8-1. The Medford-Ashland area has been in continuous compliance with the 0.12 ppm ozone standard since 1979.

Table 4.8-1 Summary of Ambient Ozone Levels in the Medford-Ashland AQMA From 1976 to 1982.

Year	Ozone Levels (ppm, hourly average) ^a		Number of Days Over 0.12 ppm
	Maximum	Second Highest	
1976	0.18	0.16	9
1977	0.14	0.13	3
1978	0.13	0.12	2
1979	0.09	0.09	0
1980	0.11	0.09	0
1981	0.11	0.11	0
1982	0.11	0.09	0
1983	0.10	0.10	0

a Pre-1979 ozone levels were measured with a different calibration method. The pre-1979 levels should be reduced by 20-25% for comparison with 1979 and later values.

4.8.2 EMISSION INVENTORY

Annual VOC emission inventories are summarized in Table 4.8-2 and outlined in more detail in the Appendix. The highway emissions are based on EPA Mobile 2 emission factors and the point source emissions are based on specific industrial production/emission information for each year.

Table 4.8-2. Medford-Ashland AQMA Volatile Organic Compound Emission Inventories.

Source Category	Volatile Organic Compounds Emissions (Tons Per Year)				
	1977	1980	1981	1982	1987 ^a
Stationary Sources	7359	6551	7374	5810	7338
Mobile Sources	<u>6004</u>	<u>4136</u>	<u>3505</u>	<u>2445</u>	<u>2036</u>
Total	13363	10687	10879	8255	9374

a Projected.

Highway motor vehicle VOC emissions have decreased substantially since 1977 due to the Federal tailpipe program. In addition, traffic volumes decreased in the Medford area from 1977 to 1982 by 11%.

Stationary source VOC emissions were initially projected in 1979 to decrease by 9% over the 1977-1982 period, based on new control requirements; the actual decrease was 21%. The additional emission increase is due to reduced commercial and industrial activity as a result of the economic recession.

Highway motor vehicle emissions are projected to decrease in future years as a result of the Federal tailpipe program. Stationary source emissions from existing sources are expected to decrease in 1983 and future years due to the final implementation of the industrial and commercial VOC control measures.

The VOC emission trend in the Medford-Ashland area is outlined in Figure 4.8-2. The emission points in Figure 4.8-2 represent the annual total VOC emissions from Table 4.8-2.

The projected 1987 VOC emission inventory is consistent with the growth projections of the Jackson County Comprehensive Plan, the Medford Area Transportation Study, and the 208 Water Quality Planning Program.

4.8.3 CONTROL STRATEGY

4.8.3.1 VOC Control Measures

The primary control measure for the reduction of transportation VOC emissions in the Medford-Ashland area has been the Federal tailpipe program (FMVECP).

Industrial and commercial VOC emissions have been reduced as a result of VOC rules adopted by the Environmental Quality Commission in December 1978 with subsequent revisions. These VOC rules affect gasoline marketing up to the service station underground tanks, prohibits the use of cutback asphalt, controls paper coating operations, small degreasers and cold cleaners, and affects roof coating contractors. The level of control required is consistent with the Reasonably Available Control Technology as defined by EPA in its Control Technology Guideline documents. The industrial and commercial VOC rules are summarized in Table 4.8-3.

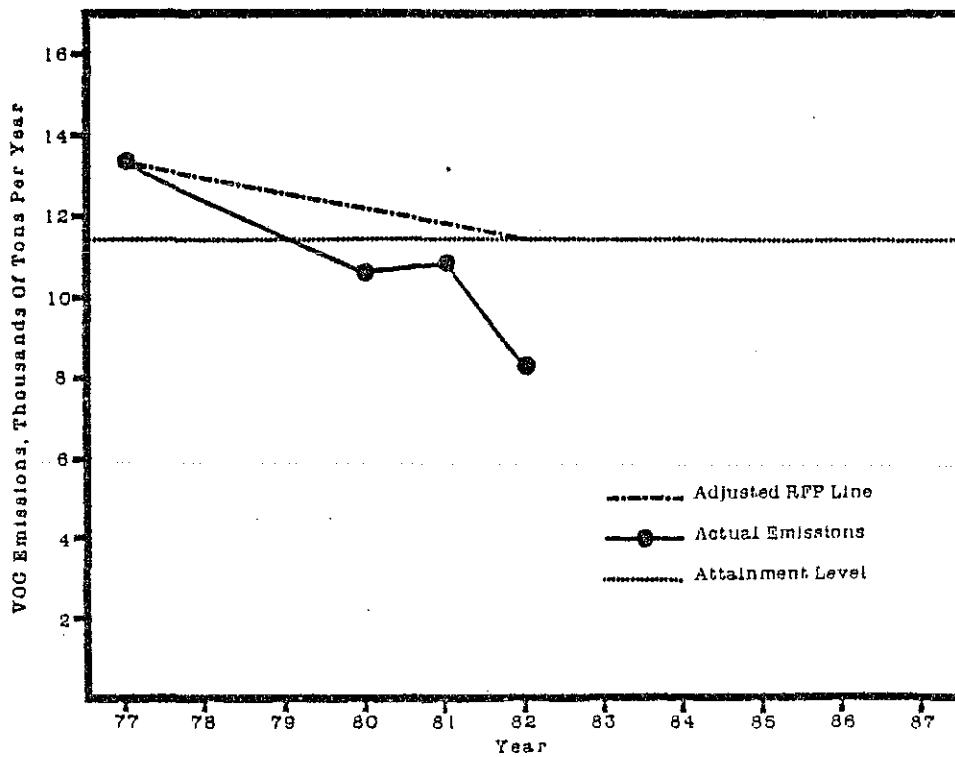


Figure 3. VOC Emission Trend in the Medford-Ashland AQMA.

Table 4.8-3. Summary of Industrial and Commercial VOC Control Rules.

<u>Rule (OAR)</u>	<u>Source Category</u>	<u>Compliance Date</u>
340-22-180	Degreasers	04/01/80
340-22-110	Service Station Loading (Stage I)	04/01/81
340-22-120	Gasoline Delivery Trucks	04/01/81
340-22-130	Bulk Gasoline Terminals	07/31/81
340-22-120	Gasoline Bulk Plants	07/31/81
340-22-220	Dry Cleaners (Perchloroethylene)	01/01/82
340-22-170	Paper and Can Coating	12/31/82
340-22-170	Metal Coating	12/31/82
340-22-140	Cutback Asphalt	04/01/79
340-22-160	Liquid Storage, Second Seals	12/31/81
340-22-210	Printing, Flexographic	07/01/82
340-22-200	Flatwood Coating	12/31/82

4.8.3.2 New Source Review

The new source review rules are outlined in Oregon Administrative Rules (OAR) 340-20-220 to 275. The new source review rules require major new or modified VOC point sources locating in an attainment area to:

1. Provide best available control technology;
2. Demonstrate that the source would not cause violations of any PSD air quality increments or any state or federal ambient air quality standards; and
3. Demonstrate that the source would not impact a designated nonattainment area greater than the significant air quality impact levels.

New or modified VOC sources which would emit 40 tons or more of VOC

per year are considered major sources and are subject to the new source review rules.

4.8.3.3 Plant Site Emission Limits

Plant site emission limits rules are outlined in OAR 340-20-300 to 320. These rules establish a baseline allowable emission rate for existing VOC point sources. These rules do not allow significant growth of stationary source emissions unless a growth margin is available or an offset can be obtained.

4.8.3.4 Growth Cushion

The Medford-Ashland ozone control strategy has reduced VOC emissions below the level required for attainment for the ozone standard. The EPA ozone isopleth plotting package (OZIP) and city-specific version of the empirical kinetic modeling approach (EKMA) were used to estimate the available growth cushion for the Medford-Ashland area. The OZIP and EKMA analysis and the 1987 VOC projections indicate that VOC emissions in 1987 will be 2000 tons per year (about 5000 kilograms per day) lower than the VOC emission levels required to just meet the ozone standard. The VOC growth cushion calculation procedure is outlined in the Appendix. The projected growth cushion by year is outlined in Table 4.8-4.

Table 4.8-4. Projected VOC Growth Cushion for the Medford-Ashland AQMA.

Year	Projected VOC Growth Increment	
	Tons/Year	Kilograms/Day
1983	320	800
1984	760	1,900
1985	1,160	2,900
1986	1,600	4,000
1987	2,000	5,000

4.8.4 RULES AND REGULATIONS

The Oregon Revised Statutes (ORS) 468.275 through 468.620 authorize the Oregon Environmental Quality Commission to adopt programs necessary to meet and maintain state and federal ambient air quality standard. The mechanisms for implementing these programs are the Oregon Administrative Rules (OAR). Pertinent rules were discussed previously and are summarized in Table 4.8-5.

Table 4.8-5. Summary of Rules Pertinent to the Medford-Ashland Ozone Control Strategy.

Rule (OAR)	Subject
340-20-220 to 275	New Source Review
340-20-300 to 320	Plant Site Emission Limits
340-22-100 to 220	General VOC Emission Standards

4.8.5 PROGRESS MONITORING

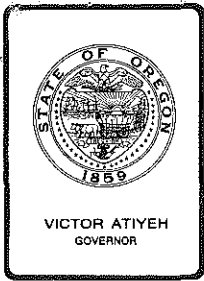
The Medford-Ashland area is expected to remain in compliance with the ambient ozone standard in future years. DEQ will review ambient ozone data on a quarterly basis and VOC emission inventories on an annual basis to ensure that compliance with the ambient ozone standard is maintained.

4.8.6 PUBLIC NOTICE AND HEARING

A public hearing on the Medford-Ashland ozone maintenance strategy is scheduled for January 1984. The public hearing notice will be issued 30 days prior to the hearing.

The public hearing notice will be distributed for local and state agency review by the A-95 State Clearinghouse 60 days prior to the adoption of the Medford-Ashland ozone maintenance strategy.

AA3975



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: Acting Director
Subject: Agenda Item No. G, November 18, 1983, EQC Meeting

Request for a Variance for the Miscellaneous Products and Metal Parts Industry From OAR 340-22-170(4)(j) Which Limits Solvent Content of Coatings.

Background and Problem Statement

The Miscellaneous Products and Metal Parts industry is one of the categories covered by the Department's Surface Coating in Manufacturing Rule (OAR 340-20-170(4)(j)). This rule limits solvent content of coatings used in the Portland Metropolitan area in order to reduce emissions of volatile organic compounds (VOC). This source category includes industries not elsewhere categorized in the VOC rules, and not covered by an exemption in the rules. Sources producing primary metal products, fabricated metal products, machinery, electrical and electronic equipment, transportation equipment, instruments, and other miscellaneous manufactured products are included under this rule. OAR 340-22170(4)(j) prohibits emissions of solvent vapors from a coating line where coatings containing solvents are greater than the amounts given below as delivered to the coating applicators:

A. Clear Coatings	4.3 lbs/gal
B. Force Air Dried or Air Dried	3.5 lbs/gal
C. Extreme Performance Coatings	3.5 lbs/gal
D. Other Coatings (i.e., powder, oven dried at 195° F or higher)	3.0 lbs/gal

The rule was adopted in accordance with provisions of the 1977 Clean Air Act Amendments, which required revisions to the State Implementation Plans (SIP) for ozone. The U.S. Environmental Protection Agency (EPA) has specified that the SIP revisions for areas designated as nonattainment for the ozone standard should contain, as a minimum, regulations for controlling volatile organic compound (VOC) emissions from stationary

sources. These regulations must provide for the implementation of reasonably available control technology (RACT).

To assist the states in defining RACT, the EPA Office of Air Quality Planning and Standards prepared a series of Control Technique Guideline (CTG) documents. The recommended emission limits for coating operations are based on the use of coatings low in organic solvents. The CTG document recommends four different emission limitations based on the type of coating, the number of colors or color changes, and the method of drying. The applicable control technology to meet the emission limitations includes process modifications (such as conversion to water based coatings, electro-deposition, higher solids coatings or powder coatings) and exhaust gas treatment (such as incineration and carbon adsorption).

Sources subject to this rule were required to be in compliance by December 31, 1982. A list of companies affected by the rule is included as Attachment 1. The Department has made a substantial effort to gain compliance with the coatings rule without much success. Of the 25 sources affected by the rule, 21 have not achieved compliance.

The Department is requesting the Commission to grant a variance to the Miscellaneous Products and Metal Parts industry from the VOC rule until July 1, 1985, to allow the Department to include this industry in its study of alternative control strategies for VOC which is discussed in Agenda Item M.

Discussion

It appears now that reducing the solvent emissions from coating operations is "technology forcing" instead of reasonably available control technology (RACT). It appears that EPA placed too much emphasis on reducing the solvent content of coatings without considering the entire coating system. There are many available low emitting coating materials on the market. The coating material is, however, only one part of the coating system. A change in coating material affects all parts of the system including:

- A. Cleaning the item to be coated,
- B. Equipment used to apply the coating,
- C. Oven to dry the coating,
- D. Time for coating to dry,
- E. Protection provided to the item by the coating,
- F. Method of stripping the coating for refinishing,
- G. Quality assurance testing, and
- H. Customer acceptance of the appearance of the coated product.

Each manufacturer must develop a coating system that will work for each product.

On the attached list of sources (Attachment 1), four sources have achieved compliance, two by use of water base paints and two by bubbling with

emission reductions from non-coating processes. Two sources, FMC and Winter Products, were previously granted variances by the Commission until 1987. Two additional sources, Northwest Marine Iron Works and Union Pacific, have requested variances. The letters of request for a variance from each of these sources are included in Attachments 2, 3, 4, and 5 respectively.

The reduction in emissions resulting from the application of this rule averages an 18 % reduction in total emissions from the plant sites involved. This is because the rule only applies to the coating line, requiring about a 50% reduction in solvent used. Other VOC emitting operations at these plants are not covered by the rules. Compliance with the rule results in less than 400 tons per year reduction in VOC emissions in the Portland airshed. This reduction is less than 1% of the total controlled VOC emissions.

When installing new or replacement coating lines, industry tends to use available low emitting coating systems because of the inherent cost savings resulting from using less solvent. These low emitting systems are presently available for a narrow range of applications.

The only add-on control equipment that has been used on coating line vapors is incineration. An incinerator would burn over 90% of the solvent vapors fed to the incinerator by the capture hoods and ducts. Although incineration is an efficient way to destroy VOC, the large amount of air used with paint spray booths has prevented anyone from using incineration to meet the rule. (Two sources in two other surface coating categories use incineration, but they are able to limit the amount of air used.)

If a variance is granted to the Miscellaneous Products and Metal Parts industry until July 1, 1985, the subject industry can be included in the Department's study of alternative control strategies. The two existing variances, FMC and Winter Products, extend until 1987. These two variances are not affected by this request.

The Commission may grant a variance to the subject industry in accordance with ORS 468.345(1)(c) and (d) when no other alternative facility or method of handling is yet available and if strict compliance would result in substantial curtailment or closing down of a business, plant or operation.

Alternatives

The Commission has the following alternatives:

Alternative 1

The Commission could grant a variance to the Miscellaneous Products and Metal Parts industry from OAR 340-22-170(4)(j) until July 1, 1985. The

existing FMC and Winter Products variances would not be incorporated into this class variance. The class variance would allow the industry to be included in the Department's study of alternate VOC control strategies. Low solvent emitting coating technology is not available for most applications and strict compliance would result in substantial curtailment or closing down of these operations.

Alternative 2

The Commission could require each source which has not yet requested a variance to do so and have the Department process all the variances individually. The results would be similar to the industry-wide variance alternative listed above.

Alternative 3

The Commission could decline to grant the variances in which case the 21 sources listed would continue to be in violation of OAR 340-22-170(4)(j). The Department would be obligated to initiate further action, including enforcement actions, to gain compliance.

Summation

1. OAR 340-22-170(4)(j) limits the VOC solvent emissions from coating lines for the Miscellaneous Products and Metal Parts industry.
2. Compliance coatings and the systems to apply the coatings are generally not available to the companies included in the Miscellaneous Products and Metal Parts industry.
3. The Department recommends that an industry-wide variance from OAR 340-22-170(4)(j) be granted until July 1, 1985.
4. If a variance is granted, the Department will reconsider the need for this rule in its study of alternative control strategies for VOC control which is due to be completed by December 31, 1984. Any relaxation of the coatings rule will have to be made up from other source categories.
5. FMC and Winter Products have already received variances until 1987.
6. The total amount of VOC emissions reductions is estimated at less than 400 tons/year in the Portland area or less than 1% of the total emissions.
7. ORS 468.325 provides that the Commission may grant specific variances if it finds that strict compliance with the rule or standard is inappropriate because:

- a. Conditions exist that are beyond the control of the persons granted such variance;
 - b. Special circumstances render strict compliance unreasonable, burdensome, or impractical due to special physical conditions or cause;
 - c. Strict compliance would result in substantial curtailment or closing down of a business, plant, or operation, or;
 - d. No other alternative facility or method of handling is yet available.
8. The Commission should find that strict compliance would be unreasonable and impractical at this time due to the fact that no other alternative facility or method of coating is yet available and strict compliance would result in substantial curtailment or closing down of a business, plant, or operation.

Acting Director's Recommendation

Based upon the findings in the Summation, it is recommended that the Commission grant a variance for the Miscellaneous Products and Metal Parts Industry with the following conditions:

1. The requirements of OAR 340-22-170(4)(j) be waived for all affected sources until July 1, 1985.
2. The FMC and Winter Products variances remain in effect as originally granted by the Commission.
3. The Department include the Miscellaneous Products and Metal Parts industry in its alternative control strategy analysis for VOC control due to be completed by December 31, 1984.

Michael J. Downs

Michael J. Downs

Attachments:

1. List of Miscellaneous Products and Metal Parts industry.
2. FMC variance.
3. Winter Products variance.
4. Northwest Marine Iron request for variance.
5. Union Pacific Railroad request for variance.

RAY POTTS:a
229-6093
October 17, 1983
AA3907

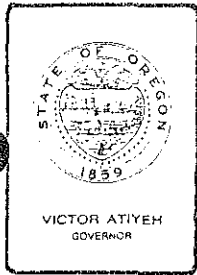
VOC EMISSIONS FROM MISCELLANEOUS PRODUCTS AND METAL PARTS INDUSTRY

Attachment 1

Company	EI No.	Permit Status	Compliance Status		Comments	T/Yr Permitted Emission Limit		T/Yr Estimated Emissions		T/Yr Emission Reduction	
			Out	In		Un-controlled	In Compliance	Un-controlled	In Compliance		
FMC	26-2944	Issued	x		Granted Variance Until '87	1086	900			186	
Freightliner	26 2197	Issued		x	By Use of Water Base Paint	334.7	315.7			19	
ESCO	26-2068	Issued		x	By Use of Water Base Paint						
Oregon Steel Mills	26-1865	In Process	x								
Pacific Fireplace Furn.	34-2767	In Process	x					12.1	10.7	1.4	
Hyster Company	26-3032	Issued	x		Scheduled to Shut Down '86	29.9					
Winter Products	26-3033	Issued	x		Granted Variance Until '87	19.65	10.86			5.79	
Portland Wire & Iron	26-2486	Issued	x		Uses Non-Conforming Water Base Paint	32	22			10.0	
Brod & McClung Pace	03-2680	In Process	x					18.5	16.2	2.3	
Myers Drum Company	26-3035	In Process	x					60.8	45.2	15.6	
Portland Willamette Co.	26-2435	Issued	x		Using a Powder Coating	96.3	59.5			46.8	
Reimann & McKenny	26-2572	Issued	x		Testing Paints	81.8	45.25			36.55	
Bingham-Willamette Co.	26-2749	In Process	x								
Tektronix	34-2638	In Process	x					99	80	19	
Amcot, Inc.	26-3036	In Process	x			25.2	22.6			2.6	
Hearth Craft	26-3037	Not Received	x								
Cascade Corporation	26-3038	In Process	x					25.4	20.27	4.7	
Wagner Mining Equip. Co.	26-3039	In Process	x					22.5	19.7	2.8	
Portland Chain Mfg. Co.	34-2666	Not Received	x								
Lear Siegler	34-2670	Issued	x			59.8	59.4			.4	
Boeing Company, Inc.	26-2204	Issued		x	By Bubble With Cleaning Solvent	11.33	10.43			.9	
Wade Manufacture Co.	34-2667	In Process	x					8.6	7.9	.7	
Northwest Marine Iron	26-2592	In Process	x		Requested Variance			43.7	36.4	7.3	
Union Pacific Railroad	26-3098	Issued	x		Requested Variance	48.7	40.9			11.9	
Chevron USA, Inc.	26-2027	Issued		x	By Bubble With Gasoline Terminal	841.3	121.5			5.0	
Total No. <u>25</u>						Total Less	<u>1822.1</u>	Total	<u>209.6</u>	Total Less	<u>373.7</u>
						Chevron USA, Inc.				Chevron, USA Inc.	

Grand Total = 2112.7 tons/yr uncontrolled
 % reduction = $\frac{373.7}{2112.7} = 18\%$

AA3920



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, October 15, 1982, EQC Meeting

Request for a Variance by FMC Corporation, Portland, from OAR 340-22-170, Surface Coating in Manufacturing, Volatile Organic Compound (VOC) Emission Limits

Background

FMC Corporation, Marine and Rail Equipment Division, operates a rail car painting operation at 4700 N.W. Front Avenue in Portland. By letter dated April 1, 1982 (Attachment No. 1), FMC reported that it will be unable to attain compliance with the Department's VOC Rules for surface coating manufacturing because coatings have not yet been developed which will meet the requirements of the railcar industry. Therefore, the company requested a variance from the emission limitation in OAR 340-22-170(1)(B) Forced Air Dried or Air Dried and Compliance Determination 340-22-107(2)(3) (increments of progress in Table 1).

Evaluation

In September 1980, the Environmental Quality Commission adopted volatile organic compound (VOC) emission limits for surface coating manufacturing which requires certain categories of manufacturing to meet specific VOC emission limitations by December 31, 1982. In the case of FMC, which falls under the classification of "Forced Air Dried or Air Dried," the facility may not emit more than 3.5 pounds of VOC per gallon of coating after the above compliance date.

In 1979 FMC produced and painted 6200 railroad cars and two marine barges. All coatings were solvent-base. The basic paint is an alkyd enamel containing approximately 40 percent solids by volume, with lead dryers and pigments. Total VOC compound emissions from the paint facility solvent average approximately 4.1 pounds per gallon of paint. Total annual emissions are estimated at 1086 tons VOC on the basis of 6200 cars and two barges produced. Railcar production in 1981 was less than 30 percent of normal sales. Currently the plant is shutdown (1200 people laid-off) and expects to build fewer than 200 cars in 1982 (estimated emissions 28 tons/year). Future operation will depend very heavily on the nation's economic recovery.

FMC has been actively involved in trying to develop paints which are acceptable from an industry and an environmental standpoint. FMC may have difficulty developing a paint or having a paint developed to be acceptable to them and to the railroad industry.

In 1981 FMC notified all of the approved paint suppliers of its need to meet the subject standard. The suppliers were requested to address the problem and begin submitting samples for testing. Development of an acceptable coating is not a simple matter of readjusting solvent content but involves the development of resins which in conjunction with the solvents and other constituents results in a coating which meet criteria for color, drying time, recoat time, short-term hardness development, resistance to outdoor environment, and a low and consistent dry film thickness. To date none of the samples tested by FMC at their Portland facility meet the established criteria.

An additional factor involved in meeting the 3.5 pounds VOC/gal. limit is the need to develop and install process equipment that will handle these new coatings of higher solid content. Consideration will have to be given to new pumping equipment, drying systems, surface pretreatment, preheating systems, and ventilation.

The company has confirmed its commitment by its continuing efforts towards the development of acceptable coatings and by initiating the design of a replacement painting facility capable of handling the new coating. By letter dated August 16, 1982 (Attachment No. 2), FMC submitted proposed schedules including increments of progress which would result in compliance by January 1, 1987.

Strict compliance with the rule at this time would be unreasonable from both a technical and economic standpoint.

This facility is located in a non-attainment area for ozone. However, it appears that present economic conditions will dictate a much-reduced production level and a corresponding reduction in emissions from this plant.

Summation

1. FMC Corporation in Portland, Oregon has by letter dated April 1, 1982 requested a variance of the volatile organic emission limits, specifically, OAR 340-22-170, Surface Coating Mfg. and 340-22-107 Compliance Determination.
2. The current standard requires FMC to use paints that emit no more than 3.5 pounds VOC per gallon by 12-31-82. FMC presently emits approximately 4.1 pounds/gal.
3. The variance is requested upon the basis of non-availability of compliance coatings and the necessity of designing, financing, and installing the equipment necessary to handle the higher solid content paints.

4. FMC has established a continuing commitment towards the development of acceptable paints as evidenced by its programs for sampling/testing of coatings and by recently letting a contract for the design of the equipment necessary to handle the higher solid content paints. The respective schedules and increments of progress are as follows:

a. Coating Development Program

9/30/81 Determine product coating requirements.
1/31/82 Paint vendors reformulating "new" paint systems.
1/31/83 Paint vendors conducting "in-house" tests and product evaluations.
1/31/84 Paint vendors conducting "on-site" and field tests.
1/31/85 Paint system testing and evaluation for production in specific systems.
1/31/86 Paint system evaluation for purposes of customer satisfaction, warranties, and final customer approval.
1/31/87 New paint system in use.

b. New Compliance Coating Facility

3/31/82 Preliminary Design Funds Approved
4/30/83 Preliminary Design Effort Completed
8/31/83 Preliminary Design Approval Obtained
5/31/84 Final Design Effort Completed
9/30/84 Final Design Approval Obtained
2/28/85 Project Funds Authorization Approved
12/31/86 Building Construction Completed

5. Whereas the plant produced 6200 cars and two barges in 1981 and emitted 1086 tons of VOC, current economic conditions project that less than 200 cars will be produced in 1982 (less than 28 tons VOC).

6. FMC Corp. is located in a non-attainment area for oxidants. At a maximum production rate of 6200 cars/year (1086 tons VOC), FMC's 1979 contribution to the nonattainment area annual volatile organic emissions represents approximately 2 percent of the total emissions.

7. ORS 468.325 provides that the Commission may grant specific variances if it finds that strict compliance with the rule or standard is inappropriate because:

- a. Conditions exist that are beyond the control of the persons granted such variance.
- b. Special circumstances render strict compliance unreasonable, burdensome, or impractical due to special physical conditions or cause; or
- c. Strict compliance would result in substantial curtailment or closing down of a business, plant, or operation, or;

- d. No other alternative facility or method of handling is yet available.
8. Strict compliance is judged to be unreasonable and impractical at this time due to the fact that compliance coatings have not been developed and the necessary process equipment must be designed to handle such coatings.

Director's Recommendation

Based upon the findings in the summation, it is recommended that the Commission grant a variance with the following conditions:

1. FMC Corporation shall proceed to control the emissions from the painting facility in accordance with the schedules cited in Summation Item No. 4.
2. Should compliance coatings and the necessary process equipment become available at an earlier date, FMC shall implement the use of compliance coatings and process equipment at the earliest possible date.
3. By January 1st of each year during the period of the variance, FMC shall submit a written progress report summarizing the previous 12 months efforts in the coating development program and new compliance coating facility.
4. The variance shall terminate December 31, 1986.
5. The variance may be terminated by written notice from the Department that it has made a finding that the company has failed to make reasonable progress towards complying with the schedule increments and attainment of final compliance.

Bill

William H. Young

Attachment 1 - FMC Letter 4-1-82
Attachment 2 - FMC Letter 8-16-82

Thomas R. Bispham:b
229-5292
June 7, 1982
RB188

FMC Corporation

Marine and Rail Equipment Division
4700 Northwest Front Avenue
Box 3616
Portland Oregon 97208
(503) 228 9281 Telex 36 0672

ATTACHMENT NO. 1

April 1, 1982

FMC

Department of Environmental Quality

P. O. Box 1760

Portland, Oregon 97207

Re: Compliance Schedule

OAR 340-22-170

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY CONTROL

Gentlemen:

This letter is submitted in response to requirements of OAR 340-22-170 for submittal of plans for achieving compliance with volatile organic compound emission limits for surface coating operations.

FMC Corporation, Marine and Rail Equipment Division (MRED), will be unable to attain compliance with those organic compound emission limits by December 31, 1982, as required in OAR 340-22-170. As detailed below, FMC reached this conclusion based on the following considerations:

- Despite the best efforts by local and national paint manufacturers, acceptable low-emission surface coatings have not been developed to meet the requirements of the railcar industry.
- A proposed new railcar paint facility at MRED's Portland plant, which will incorporate features needed to accommodate higher

April 1, 1982

Department of Environmental Quality

Page Two

solids coatings and other equipment needed to meet a 3.5 lb/gallon standard, will not be in operation until 1986.

- Our railcar production in 1981 was less than 30% normal sales. The plant is currently shut down and we expect to build fewer than 500 cars in 1982.

FMC has participated fully in the VOC standard-setting process in Oregon, in California and in other states where FMC facilities operate equipment painting lines. Our position in the Oregon deliberations was (and is) that our railcar manufacturing facility should be considered in a separate portion of the regulation, based on requirements unique to our industry. The research and development efforts within FMC and the surface coating industry, which were underway then, have continued and increased in intensity.

The results of these efforts to date, however, have yet to result in commercially available coatings that meet the 3.5 lb. VOC/gal. requirement while also meeting basic acceptability limits for air drying coating systems. These acceptability criteria include color range (specified by customers, rather than FMC), drying time, recoat time, short-term hardness development, resistance to outdoor environment, and a low and consistent dry film thickness. The limitations of our present Portland facility are an additional

April 1, 1982

Department of Environmental Quality

Page Three

factor for FMC, though less important than the basic nonavailability of satisfactory coatings.

We have been actively searching for a coating system for our railcar facility that will meet both DEQ and FMC requirements. In late 1981, we formally requested 13 suppliers of surface coatings (both local and nationwide) to send sample quantities of high solids, solvent-based coatings to us for evaluation. Earlier tests by FMC Central Engineering Laboratory and others had already shown water-borne surface coating systems to be unacceptable from a durability standpoint, based on standard ASTM tests.

To date, five suppliers, including four major nationwide coating manufacturers, have provided samples for evaluation and testing in Portland. None of the five has proven acceptable. Some, for example, never dried to an acceptable hardness. Others had problems with second color coats (most of our orders are two or more colors) lifting first color coats.

Most of the other suppliers from whom we requested test samples have informed us that their development efforts have not yet produced acceptable compliance coatings.

April 1, 1982

Department of Environmental Quality

Page Four

FMC is committed to making every possible effort to meet air quality regulations. We are presently designing a replacement railcar painting facility for Portland, of the same capacity as the existing one, which is scheduled for full operation in 1985-86. This facility is being specifically designed to employ the latest in surface coating system components and their application.

FMC fully believes that the solution to the VOC emission problem from surface coating operations is within the grasp of the coating suppliers. The fact that California has allowed interim limits attests to the difficulty in meeting technology-forcing standards on the time frame originally conceived by the regulators.

Our railcar manufacturing facility in Portland is presently shut down. Although full capacity for the plant is about 5,000 railcars per year, 1981 orders produced 1,600 cars and present 1982 projections are for fewer than 500 cars, mostly prototype models. Given present economic conditions, we are unable to project when we will resume normal operations or approach prior levels of production.

Since the production level of the present facility is almost zero, and there are no acceptable compliance coatings available and a replacement facility designed to meet all the needs of the new coatings and their application is

April 1, 1982

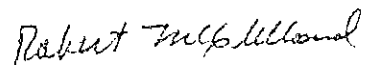
Department of Environmental Quality

Page Five

already on the drawing boards, FMC proposes that full compliance for its railcar manufacturing facility in Portland be set to coincide with operation of the new paint facility.

Recognizing that you will have technical and procedural questions, we will look forward to meeting with DEQ staff to discuss this proposal and move toward establishing a formal compliance program for MRED.

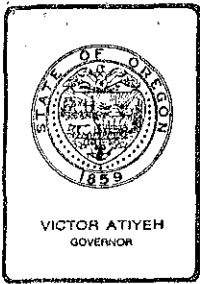
Yours very truly,



Robert McClelland

Manager, Manufacturing Engineering

pk



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. G, January 14, 1983, EQC meeting

Request for a Limited Time Variance from OAR 340-22-170-(4)(j)
Which Limits Solvent in Coating, for Winter Products of
Portland

Background

Winter Products Corporation, 11727 N.E. Marx, Portland, uses clear and pigmented lacquer to give a bright finish to furniture hardware, made from small, brass-plated, zinc die castings. About 17 tons of solvent are emitted (1978 data) from their annual lacquer use.

In September of 1980, OAR 340-22-170(4)(j) was adopted to limit solvent in surface coating in the manufacture of miscellaneous parts to 4.3 lbs of solvent per gallon of coating, when the parts are clear coated. The effective date of the rule is January 1, 1983. This rule was part of the EPA required VOC rules for the Portland area ozone non-attainment problem. Winter Products Corporation uses lacquers that have nearly 6.4 lbs of solvent per gallon of coating.

Problem

After soliciting their supplier, Lilly Industrial Coatings, for a new formulation, Winter Products tried one with lower solvent content and had failures when their products experienced tarnish where the coat had not completely covered. The hardware has to withstand some harsh, salt-spray atmosphere at East Coast furniture manufacturing plants. Both Lilly Industrial Coatings and Rohm and Haas (their supplier) are trying to formulate compliance coatings for Winter Products. They estimate two to six years before such a coating will be available.

Delaying a 5.5 ton/year reduction in solvent will not affect Reasonable Further Progress in attaining the ozone standard as this represents less than 1/100 of a percent of the required airshed reduction. Delaying this reduction will not have a significant effect on Portland's ozone strategy.

Alternatives and Evaluation

Winter Products is in a competitive business; if their pieces do not have bright finish, customers will reject their product and buy from competitors who are allowed to use high solvent lacquers to impart the bright finish in non-ozone problem areas.

A variance could be granted with an effective date of January 1, 1987 (four years from now). This should give Winter Products and their suppliers time to develop lower solvent coatings to comply with the 4.3 lb/gal rule. The variance and rule could require annual progress reports.

A variance sought under ORS 468.345(1) can be satisfied in three ways:

- (a) Conditions are beyond the control of the plant; certainly the case here, where the plant is at the mercy of coating suppliers.
- (b) Strict compliance could close down the plant; this appears to be the case as no acceptable coating appears available at this time.
- (c) No alternative method is yet available; at least in their search, neither the firm, their suppliers, nor the DEQ staff have come up with an alternative method.

The solvent rule was adopted under EPA's Reasonable Available Control technology requirement. In fact, it now turns out that for this type of surface coating, the rule is technology forcing. A four year variance would also give the Department time to evaluate the practicality of and need for attaining compliance with this rule.

Summation

1. Winter Products Corporation has requested a variance from OAR 340-22-170(4)(j) for excess VOC emissions from their lacquers.
2. There is no acceptable coating available to Winter Products Corporation which can meet the Department's rules but one may be developed within 2-6 years.
3. The subject VOC rule was adopted as Reasonably Available Control technology for surfacing coating but in the case of certain applications it appears to be technology forcing.
4. The Commission should find that conditions are beyond the control of the plant; that strict compliance would close down the plant, and that no alternative method is available in order to grant the variance. The Department is of the opinion that all three of these conditions are true.

EQC Agenda Item No.
January 14, 1983
Page 3

Director's Recommendation

Based upon the findings in the Summation, it is recommended that the Commission grant a variance to Winter Products Corporation of Portland from OAR 340-22-170(4)(j), VOC Limitation in Coatings, until January 1, 1987, providing that Winter Products provide annual progress reports each January on how they are progressing to reduce their VOC emissions to that required by the OAR.

William H. Young

Attachment: Winter Products November 9, 1982 Variance Request Letter
AA2874
J.F. Kowalczyk:a
229-5459
December 17, 1982

WINTER PRODUCTS CORP.

FURNITURE AND CABINET HARDWARE

11727 N.E. MARX
PORTLAND, OREGON 97220November 9, 1982
State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITYRECEIVED
NOV 10 1982

Department of Environmental Quality
522 S.W. 5th Ave.
Box 1760
Portland, Oregon 97207

AIR QUALITY CONTROL

Attn: Mr. Peter Bosserman

Dear Mr. Bosserman:

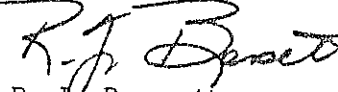
Please find enclosed the ACDP application forms for our facility at
11727 N.E. Marx St.

As you suggested, I have been in contact with our supplier concerning meeting the new regulation of 4.3 lbs. per gallon of VOC emissions from our spray booth. As you can see from the enclosed forms, we are now at 6.52 lbs. per gallon. In discussing this matter with Jerry McKnight at Lilly Industrial Coatings, he has explained that a formulation to meet the standard does not exist at this time which will also meet the requirements of our industry. We, therefore, if faced to meet the standard, would be forced to discontinue operation until such time as an alternative solution could be developed. This, as I am sure you are aware, would not be an acceptable approach.

Mr. Bosserman, I would like to make application for a variance under Revised Oregon Statute #468-345 until such time as a solution and/or process is developed. I have asked my supplier to work on this problem, keeping in mind the 4.3 lbs. per gallon standard which the government has imposed.

I would appreciate your informing me of the steps necessary, if any, for me to take in order that this matter can be taken care of as soon as possible.

Sincerely yours,
WINTER PRODUCTS CORP.



R. J. Bassett
General Manager

RJB:ll
Enclosure

6-11-82

file 26-3101



MARINE DIVISION
NORTHWEST MARINE IRON WORKS

Attachment 4

MAILING ADDRESS: P.O. BOX 3109
PORTLAND, OR 97208
LOCATION: PORTLAND SHIP REPAIR YARD
5555 N. CHANNEL AVE., BLDG. 2
PORTLAND, OREGON 97207
PHONE: (503) 285-7557
TWX: 910-464-6107 NORMARINE PTL

November 23, 1982

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

RECEIVED
NOV 24 1982

AIR QUALITY CONTROL

Mr. Ray Potts *RP*
Department of Environmental Quality
P. O. Box 1760
Portland, Oregon 97207

Dear Mr. Potts:

The purpose of this letter is to request a variance for VOC emission reduction requirements for the Northwest Marine Iron Works surface coating building on Swan Island. The requirements of our current discharge permit specify that after December 31, 1982, VOC emissions from the operation shall not exceed 3.5 pounds per gallon (item No. 8 of the permit). Current emissions are calculated to be 3.7 pounds per gallon. The discussion that follows provides background information on the facility and a justification for granting the variance.

Northwest Marine Iron Works operates a ship repair/rebuild facility on Swan Island where U.S. and international ships can be serviced. Typical operations performed include routine maintenance to repair deteriorated metal and coatings, custom fabricating and installation of components to meet new safety and other requirements, and complete rebuilding and refitting of ships. All work performed is specific to a particular ship; that is, all parts manufactured are custom fabricated and finished to specifications set by each client. Northwest Marine Iron Works competes with other shipyards both in this country and abroad for its business.

The surface coating building is used to prefinish some of the fabricated components before installation on the ships. One end of the building houses a shot blast room, the other end is the painting and drying area. Paint overspray is controlled by six water-wall type exhausters with a total volume flowrate of 120,000 cubic feet per minute. The drying area is part of the same room and is kept heated during cool periods.

Coatings used are specific to each part but are virtually all marine coatings designed to maximize protection in corrosive marine conditions. About 90 percent of the paint used is manufactured by International Paint Company with the balance from various manufacturers, including Devco

and Rodda. A list of paint usage for 1982 and the specific International Marine Coatings products used is included in Attachment 1. None of the coatings used require further thinning for application and all solvent used for cleanup is recycled to the outdoor painting facility.

Of particular importance in this case is the fact that most of the coatings used by Northwest Marine are client supplied. That is, the companies whose ships are being serviced write the specifications for coatings to be used and also purchase and supply the coatings to Northwest Marine for each job.

To reduce the amount of VOC emitted, the two basic approaches normally investigated are 1) to reduce the solvent content of the coatings used or 2) to capture some of the solvent from the paint room exhaust to prevent its release to the atmosphere.

Reducing the solvent content of the coatings would be difficult if Northwest Marine is to remain competitive in its market. Specifications for the coatings are written based on years of experience with various coatings under severe marine conditions. According to Jeff Longmore, Technical Director at International Paint Company, coatings can be formulated with lower solvent content, but this usually shortens the coatings' service life. If Northwest Marine were to ask its clients to alter their specifications, it would put them at a severe competitive disadvantage. Unlike buildings, ships can easily be sent to service facilities at other U.S. or international ports where these restrictions do not exist. In addition, a shortened service life would mean more frequent recoating and ultimately more VOC emissions.

Current VOC emissions from the building are calculated to be about 25 pounds per day (Attachment 2). Even at baseline conditions of 336 pounds per day, based on DEQ estimates (Attachment 3), treating 120,000 cfm to remove this material does not seem practical. A rough estimate of just the capital cost for control equipment exceeds \$1,000,000. Additional operational costs would include energy consumption and maintenance (including painting).

It is understood that variances from the regulations are granted based on the specific plant conditions that may apply to items a, b, c, or d of ORS 468.345 (Attachment 4). We believe that a variance should be granted based on three of these items. A brief summary of these items and our explanation follows.

(a) Conditions exist that are beyond the control of the persons granted such variance.

Since most of the coatings used are specified and supplied by the client, requiring that they use low solvent coatings with a possible shortened service life would jeopardize Northwest Marine Iron Works' position as a quality service facility.

- (b) Special circumstances render strict compliance unreasonable, burdensome or impractical due to special physical considerations or cause.

The present exhaust system, moving 120,000 cfm, is very large to protect the health of the workers in the building. Treating this large flowrate for the relatively small amount of VOC involved is, in our opinion, unreasonable, burdensome and impractical.

- (c) Strict compliance would result in substantial curtailment or closing down of a business plant, or operation.

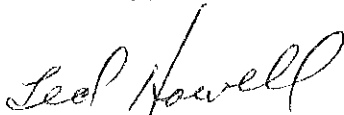
It is impossible to predict the actual impact of strict compliance with the regulation, but if it becomes a requirement that clients must use only a particular class of paints on ships serviced in Portland, Northwest Marine Iron Works as well as other ship repair facilities in this area will be placed at a considerable disadvantage in the international ship service market. In this case, the issue is not that of an added cost on the part of Northwest Marine, but that of being less able to provide the level of service that clients expect.

Calculations show that the paints presently used emit an average of 3.7 pounds per gallon of volatile organic compounds. If that is reduced to meet the 3.5 pounds per gallon regulation, the airshed will receive 322 pounds of VOC less each year at the current paint use rate. We suggest that this amount, or even ten times this amount, is insignificant to the air quality of Portland. We feel that the small amount of emission change involved is not worth the risk of possibly losing service work to other ports. The disadvantages of adding an emission control device would far outweigh the advantages.

We ask that the Environmental Quality Commission grant a variance without a time limit for the painting facility at Northwest Marine Iron Works. As a part of this variance, we agree to keep records of the quantity, brand and types of paint used to facilitate VOC calculations in the future.

We hope this has adequately described our situation such that we can reach a mutually satisfactory agreement. If you need any further information, please call me.

Sincerely,



Ted Howell
Plant Manager

DRR:pr
Attachments

Northwest Marine Iron Works

Paint Use Records (First data taken is for 2/82)

2/82 361 gallons

3/82 88 gallons

4/82 189 gallons

5/82 200 gallons

6/82 117 gallons

7/82 124 gallons

8/82 169 gallons

9/82 229 gallons

August = 184.6 gallons x 12 = 2215 gallons/year total use

1982 is the first year when paint use records have been kept.

Attachment 1b

International Marine Coatings Used by Northwest Marine Iron Works

<u>Name</u>	<u>International No.</u>	<u>% Use</u> *1	<u>% Use</u> *2
Lagoline Gloss Enamel	CLB-000	20	17.9
Latenac High Build Gray	LPL-786	10	8.9
Regular Red Lead	CPA-250	5	4.5
Super "Primekote" Red Lead	CPA-350	5	4.5
Vinux Finish	VFB-000	10	8.9
Vinux Primer Gray	VXL-000	20	17.9
Bitoxy Black	JXA-206/210	2	1.8
Intergard Tank Coating	TAA-424/423	20	17.9
Interzinc SelfCure Inorganic Zinc Silicate	QHA-027/028	20	17.9
		<hr/>	<hr/>
		112	100

*1 - Verbal estimate by Ray Coury, NMIW Painter Foreman 10/20/82.

*2 - Adjusted figures to add up to 100%

10/21/82 - D.R.R.

International Marine Coatings

NMIW - VOC Calculations for 1982

<u>International Number</u>	<u>% Use</u> *1	<u>Gal./Yr.</u> *2	<u>VOC Lb./Gal.</u> *3	<u>VOC Lb./Yr.</u>	
CLB-000	17.9	396	3.91	1,548	
LPL-786	8.9	197	4.54	894	
CPA-250	4.5	100	3.87	387	
CPA-350	4.5	100	3.65	365	
VFB-000	8.9	197	5.54	1,091	
VXL-000	17.9	396	5.21	2,063	
JXA-206/210	1.8	40	2.41	96	
TAA-424/423	17.9	396	0.64	253	
		<u>1,822</u>		<u>6,699</u>	= 3.35 T/Yr.

Aug. Lb. VOC/Gal. = 3.68 Lb./Gal.

- *1 - From NMIW estimates.
- *2 - Based on 2,215 gal./yr. total estimated.
- *3 - From manufacturer (Jeff Longmore 11/10/82).

Northwest Marine Iron Works

Baseline VOC Emission Rate From Paint Booth

Calculations from DEQ records as per Ray Potts, 11/10/82.

Paint Use:	80 gal./day in Paint Building
Solvent Fraction:	0.6 by volume
Solvent Wt.:	7.0 lb./gallon
Operation:	260 days/year

$$\frac{80 \text{ gal/day} \times 0.6 \times 7.0 \text{ lb./gal.} \times 260 \text{ day/yr.}}{2000 \text{ lb./ton}}$$

∴ Baseline (1977 or 1978) VOC emission rate = 43.7 tons solvent/year

UNION PACIFIC RAILROAD COMPANY
LAW DEPARTMENT



L. JAMES BERGMANN
General Solicitor
JOHN F. WEISSER, JR.
Assistant General Solicitor
JEFF S. ASAY
ROY P. FARWELL
PETER W. HOHENHAUS
General Attorneys
CAROLYN L. LARSON
BARRY L. GROCE
Assistant General Attorneys

Attachment 5

628 Pitlock Block
P.O. Box 4265
Portland, Oregon 97208
(503) 249-2660

December 29, 1982

File: 018-3-6.1

RP original to TRB 12-30-82
Mr. Ray Potts
Department of Environmental Quality
P. O. Box 1760
Portland, OR 97207

Variance Application for Albina Paint Shop,
Portland, OR

Dear Mr. Potts:

The referenced variance application is attached. As indicated, strict compliance with OAR 340-22-170 is not possible at this time. Our Research & Standards Laboratory will continue testing paints, however, in an attempt to comply with the rules as soon as possible. In the meantime, we would appreciate your consideration of our application.

Very truly yours,

L. James Bergmann km
L. James Bergmann

KM:e
enc.

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
DEC 30 1982
AIR QUALITY CONTROL

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION
OF THE STATE OF OREGON

No. _____

IN THE MATTER OF UNION PACIFIC)
RAILROAD COMPANY'S APPLICATION)
FOR A VARIANCE FROM OAR 340-22-)
170(4)(j)(B), FOR ITS ALBINA)
PAINT SHOP IN PORTLAND, OREGON)

Union Pacific Railroad hereby applies for a variance from the referenced Rule, as indicated below, prescribing that paint used on new cars may emit no more than 3.5 pounds per gallon of volatile organic compounds. UP's Air Contaminant Discharge Permit 26-3098 currently requires strict adherence to this rule which will severely curtail the Paint Shop operation.

ORS 468.345 provides that a variance from the air contamination rules may be granted by the Commission if:

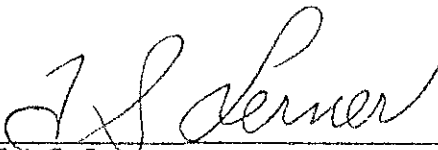
- (a) conditions exist that are beyond the control of the applicant; or
- (b) special circumstances render strict compliance unreasonable, burdensome or impractical; or
- (c) strict compliance would result in substantial curtailment or closing of a business, plant or operation; or
- (d) no other alternative method of handling is yet available.

Our Research and Standards Laboratory tested various paints which meet the emissions standards and found that none are available which also meet Union Pacific Railroad's standards for durability and application. All four of the conditions under which a variance may be obtained exist in this situation. The necessary product is not available, and lack of the product makes strict compliance with the Rule impractical. Our operations will be severely curtailed if strict compliance is required. Finally, no reasonable alternative paint is currently available on the market.

Following is a chart which lists the solvent emissions of the various paints currently used in the Paint Shop:

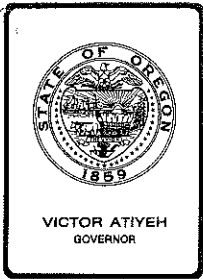
<u>Type of Coating</u>	<u>Weight of Solvent Emitted (lbs. per gallon)</u>
Grey Enamel	4.99
Red Enamel	4.57
Black Enamel	3.24
Yellow Enamel	5.00
Primer	5.78

Union Pacific requests a variance authorizing use of these coatings and VOC emissions during the permit period. Union Pacific is continuing its program of testing paints which emit low levels of volatile organic compounds, such as the black enamel in current use. We will begin using other paints which comply with the Rule and our standards as soon as these become available on the market at a reasonable cost.



T. S Lerner
Superintendent of Shops
Union Pacific Railroad

Date: 12/29/82



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: Acting Director

Subject: Agenda Item No. H , November 18, 1983, EQC Meeting

Request by Sportsman's Park Sewer Association for Approval of an Interim Alternative Security Plan to Meet the Surety Bond Requirement of ORS 454.425 and OAR Chapter 340, Division 15.

Background and Problem Statement

Sportsman's Park is a recreational subdivision located at Rock Creek Reservoir in Wasco County. A 100-lot portion of the development, known as Sportsman's Parks 3 and 4, is served by a community drainfield system. The system consists of individual septic tanks, collection lines, a lift station and a large subsurface drainfield.

The Department became involved with phase 3 and 4 of the development in 1972 after it was determined that the area was not suitable for individual on-site systems. A Water Pollution Control Facility (WPCF) permit was issued to the developer for construction and operation of the system.

At this time all of the lots served by the community system have been sold by the developer. The Sportsman's Park Sewer Association, consisting of the 100 lot owners in Sportsman's Parks 3 and 4, now maintains and operates the sewerage system and they have made application to the Department to take over the WPCF permit. Since this is a privately owned sewerage system, one of the requirements they must meet is to provide the Department with a surety bond. In this case the amount of security needed is \$10,500. They have been unable to obtain a perpetual surety bond so they have requested that the Commission approve an alternative method of providing the security, as provided for in OAR 340-150-020(3).

Their specific proposal is as follows:

1. Provide an initial savings account, in accordance with OAR 340-15-020(2), in the amount of \$2,700, which is twenty-five (25) percent of the total bond. The remaining \$7,800 will be secured by a temporary bond.

2. On May 1, 1984, the savings account will be increased by \$3,900 to a total of \$7,800 and the bond would be reduced by \$3,900.
3. On May 1, 1985, the remaining \$3,900 would be deposited in the savings account providing the required total of \$10,500 and the bond would be cancelled.

Interest from the savings account would be assigned to the Sewer Association.

OAR 340-15-020(3) provides that other security, in a form and amount specifically approved by the Commission, may be provided. The Sewer Association is requesting approval of their plan under this provision so that they can establish the savings account in a manner that is economically acceptable to their members.

Alternatives and Evaluation

The Sewer Association is attempting to comply with the Department's surety bond requirements. The Commission has three options available to it in this matter.

Option 1

The first option would be to approve the Sewer Association's request to provide a renewable bond as a portion of the surety requirement as opposed to a perpetual bond. There is some risk that the bond could be cancelled or not be renewed.

The risk is mitigated by the Sewer Association's proposal to initially provide twenty-five (25) percent of the total required security in the form of an insured savings account assigned to the Department. This account will be increased to 62 percent of the total required security on May 1, 1984.

The efforts put forth by the Sewer Association to operate and maintain the system, as well as to comply with our requirements for assuming the WPCF permit, would indicate that they will comply with their proposal. In addition, the maintenance and repair work that they have completed in the last year would make it very unlikely that the Department would have a need to activate the security to take care of system operation needs in the near future.

Option 2

The Commission could elect to require that the Sewer Association provide a perpetual surety bond as provided for in OAR 340-15-020(1). The Sewer Association has already attempted to obtain such a bond through their insurance agent, as well as through two other insurance companies. These attempts have not been successful.

Requiring this alternative would mean that the Sewer Association would not be able to assume the WPCF permit. This would leave the permit responsibilities with the subdivision developer. The developer appears to be attempting to remove himself from any further involvement or responsibility with the subdivision.

Option 3

The Commission could require that the security be provided in one lump sum as an insured savings account in accordance with OAR 340-15-020(2). The Sewer Association does not have the cash assets to provide an account of \$10,500 at this time.

The system is maintained and operated through regular and special assessments of the members. The members now pay three regular assessments for sewer, water, and general maintenance in the subdivision. They were also faced with a special assessment this last year to complete needed maintenance and repair work required by the Department. An additional special assessment to provide the full \$10,500 would create an economic burden that many of the members would have difficulty meeting.

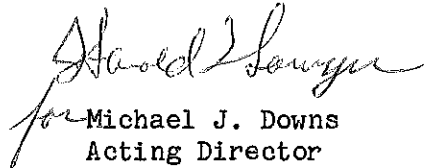
Summation

1. The Sportsman's Park Sewer Association operates and maintains the community drainfield system serving the 100 lots in Sportsman's Parks 3 and 4.
2. The Sewer Association has applied to the Department to take over the WPCF permit for the system. The permit is now in the developer's name.
3. ORS 454.425 and OAR 340-15-020 require that privately owned sewerage systems provide the Department with a surety bond or other approved form of security for construction, operation, and maintenance of sewage collection, treatment or disposal facilities.
4. The Sewer Association has been unable to obtain a perpetual surety bond to satisfy the security requirements and they do not have the cash reserve to provide a \$10,500 savings account in one lump sum.
5. The Sewer Association has proposed to establish an insured savings account assigned to the Department and is requesting approximately 1-1/2 years to deposit the complete balance required in the account.
6. To provide the total security during the interim period they also propose to provide the department with a renewable bond.

7. The Commission may approve such security proposals under the provisions of OAR 340-15-020(3).

Acting Director's Recommendation

Based upon the summation, it is recommended that the Commission approve the request of the Sportsman's Park Sewer Association and allow the required security to consist of an insured savings account in combination with a renewable bond.


for Michael J. Downs
Acting Director

Attachment: 1. Sportsman's Park Sewer Association Request, September 30, 1983

Donald L. Bramhall/Charles K. Ashbaker:g
WG2856
388-6146/229-5325
October 19, 1983

September 30, 1983

Mr. Donald Bramhall
D.E.Q.
Centrall Region
2150 N.E. Studio Rd.
Bend, OR 97701

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

RECEIVED
OCT 15 1983

Sportsman's Park
File No. 83860
Wasco County

WARD DISTRICT OFFICE

Dear Mr. Bramhall:

As you know we have been trying to meet all the requirements you have set before us. We realize this has been a slow process. You know that there had been some dispute between the association and the developer, this dispute has been settled. We moved ahead with the required work needed on the sewer system. As none of us had very much knowledge about sewer systems this too took some time. After a learning process and some very good instruction by Hydronix of Portland, we soon understood the working operations of the system. We feel quite confident in our ability to operate the system correctly and trouble shoot any problems that might occur.

All major repairs have been made on the lines and infiltration is now considered has a minor maintance problem in which we will always face. The pumps have been rebuilt and the controll panels have been inspected by Hydronix, they went through our entire pumping station, it is now in excellent operating condition. The pumps are only pumping 2 to 3 hours a day. This shows the reduction in infiltration and the improved operation of the pumps. We have aquired the legal deeds of ownership on the sewer system and have completed the incorporation process.

However we are unable to aquire the perpetetual performance and maintance bond for \$10,500.. Bonding companies don't feel we have adequate assessts. We have discussed the option of a savings for the amount assessable to D.E.Q. with the interest going to the association. This is a good idea as the initial cost would soon pay for it's self in interest. And we would be saving the money that would have gone to pay for the bond, approximatly \$550.00 a year. The interest could help in building up our maintance fund for major emergencies that might arrise in the future.

To acheive a savings of \$10,500.00 it would take our association at least two years. We would like to request the following perposal go before the D.E.Q. Commision for thior approval on Nov. 18, 1983. We will be availiabile if our presence is requested.

PERPOSAL

Open an initial account of at least 25% of the required \$10,500. and we will aquire a temperary bond for the remaining 75%. On predetermined dates we would deposit predetermined amounts, and lower the value of the bond, untill the full \$10,500. has been raised.

OUR PERPOSAL FOR PAYMENT

Before of By Nov. 18 1983 we will open an accpunt for \$2700. assessable to D.E.Q. with the interest going to the association, we will also aquire a temperary bond for \$7800.. Then on May 1, 1984 we will deposit $\frac{1}{2}$ of the remaining 75% equalling \$3900. and aquire a temperary bond for the remaining \$3900.. Then on May 1, 1985 we will deposit the remaining \$3900. and drop the bond, as the account would total \$10,500..

The purpose for the two year time frame is simple, the members of the assn. are effected by the states economy as is everyone. Thes same members have just paid special assesments so that all the required repairs could be done. They also paid there yearly dues and must face properity taxes very soon. To ask them to come up with the entire amount now would cause a burden on them and possibly on our maintance fund.

I hope you will consider carefully the earnest effort we have made to meet all your requirements, since we have taken over the system.

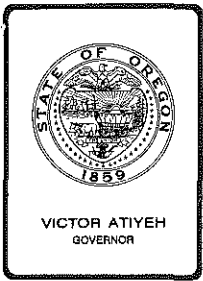
The following pages have the required information requested in your August 30, 1983 letter.

Enclosures.

Mailing Address--- Sportsman's Park
P O Box 712
Wamic, OR 97063

Sincerely
Kendra Nelson

Kendra Nelson
Secretary for the
Board of Directorw



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: Acting Director
Subject: Agenda Item No. I, November 18, 1983, EQC Meeting

Proposed Adoption of Amendments to Motor Vehicle Emission Control Inspection Rules. OAR 340-24-306, 310, 315, 320, 325, 340, and 350; Affecting Operating Procedures, Pollution Equipment Inspection, the Engine Exchange Policy, Test Method, and Licensed Fleet Policy.

Background and Problem Statement

At the Environmental Quality Commission meeting of August 19, 1983, authorization was granted to conduct a public hearing to gather testimony on proposed amendments to the Vehicle Inspection Program Rules. Rule modifications are proposed in the following areas:

1. Allowing specific test schedules for licensed fleets vehicles (OAR 340-24-306),
2. Several changes in the inspection test procedure and a limitation on a special Ford vehicle test procedure (OAR 340-24-310 and 315),
3. Simplification of the tampering inspection for 1970 through 1974 vehicles (OAR 340-24-320 and 325),
4. Modifying the engine change policy for diesel and for 1980 and newer vehicles (OAR 340-24-320),
5. A change in the licensed fleet program to remove battery powered exhaust gas analyzers from the approved list (OAR 340-24-350), and
6. Requiring certification of licensed inspectors every two years (OAR 340-24-340).

A hearing was held October 3, 1983. Testimony was received from one individual. A Hearing Officer's report is included as Attachment 1. The testimony received supported the proposed changes affecting licensed fleets. The Statement of Need for Rulemaking and Fiscal Impact is included as Attachment 2. The proposed rule amendments are included as Attachment 3. It is proposed that these changes, if adopted, be effective December 31, 1983.

Alternatives and Evaluations

The staff report of August 19, 1983, Attachment 4, outlined the arguments for each rule amendment proposed. Briefly, the rule actions proposed include:

OAR 340-243-06

The change proposed incorporates permanent fleet vehicles within the section currently used for nonexpiring, publicly owned vehicles. The changes thus provide the fleets an opportunity to establish alternative testing schedules. This area of the rule received support during the public hearing.

OAR 340-24-310 and 315

This section of the rule describes the test procedure used in the inspection. Several detail changes were proposed. Discussions with Ford Motor Company personnel indicated that hardware changes have been incorporated in their engine system design which would no longer require the special testing procedures spelled out in paragraph 310(12). An addendum to the proposal was made August 23, 1983. This change would limit the special test procedure to 1981 through 1983 Ford vehicles. No comments were received that related to these two rules.

OAR 340-24-320 and 325

This section of the rule describes the various test criteria. Included in this section are the tampering inspection guidelines and engine change criteria. The tampering inspection guidelines would be modified to simplify anti-tampering inspection procedures on 1970 through 1974 vehicles. If adopted, only the positive crankcase ventilation, fuel evaporative, or air injection reactor systems would be included in the anti-tampering portion of the test for 1970 through 1974 model year vehicles.

The engine change policy is also proposed to be modified. Clarifications are provided for diesel vehicle owners wishing to change their vehicles back to gasoline power. Clarification is also provided for owners of 1980 and newer vehicles that find it necessary to seek engine changes. No comments from the public were received, either formally or informally, on this section of the rules change.

OAR 340-24-340

This section covers the licensing procedures for vehicle inspectors. The proposed changes limit an inspector's license to a two year period and require that all inspectors shall pass an examination prior to each license issue. General support for this area has been informally received from fleet operators.

OAR 340-24-350

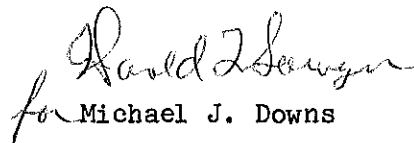
This section of the rule addresses the exhaust gas analyzers used by the stations and the license fleets. The proposed change would delete all battery powered exhaust gas analyzers from the approved list. The approved list applies only to licensed fleet operations. No comment on this portion of the rule revision was received.

Summation

A public hearing on the proposed rule revisions was held and testimony was received. The testimony received was supportive of specific rule revisions. No testimony in opposition to the rule proposals was received. The revisions will affect inspection program criteria and test procedures and the fleet operation program. Changes in the anti-tampering inspection for older cars (1970 to 1974) would be made, easing those requirements. The engine change policy would be updated to provide guidance for those owners of diesel powered vehicles who wish to change to gasoline engines. The effective date of these rules would be December 31, 1983.

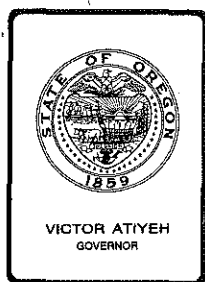
Director's Recommendation

Based upon the Summation, it is recommended that the proposed rule amendments listed in Attachment 3 be adopted.


for Michael J. Downs

- Attachments: 1. Hearing Officer's Report
2. Statement of Need for Rulemaking and Fiscal Impact
3. Proposed Rule Amendments
4. Agenda Item No. D of August 19, 1983 EQC Meeting, Without Attachments (Commission Only)

W.P. JASPER:a
229-5081
October 13, 1983
VA3909



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: Hearing Officer

Subject: Report on Public Hearing of October 3, 1983, Proposed Rules for Inspection Program

A public hearing was authorized by the Environmental Quality Commission to be conducted October 3, 1983. On October 3, at 7:30 p.m., in room 707 of the State Office Building in Portland, a hearing was held. There were two people in attendance and one offered testimony. The testimony addressed the general impact on fleet operations. No written testimony was received.

Mr. Alan B. Crittenden, representing United Parcel Service, offered the testimony. Mr. Crittenden asked a couple of questions regarding when the proposed rule changes would be effective and how the alternative testing schedule portion of the proposed rule would be interpreted. In response, it was indicated that the rules might be effective at the first of the year and that the alternative schedule was intended to allow fleets maximum flexibility in establishing a testing schedule to insure that vehicles with non-expiring license plates were tested during the year's period. Mr. Crittenden indicated his support for the proposed rule amendments, as they affected his fleet operation.

The hearing was adjourned at 7:50 p.m. No additional comments were received.

Recommendation

Your hearing officer makes no recommendation in this manner.

Respectfully submitted,



William P. Jasper

William P. Jasper:j
229-5081
October 13, 1983

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(2), this statement provides information on the intended action to amend a rule.

Legal Authority

Legal authority for this action is ORS 468.370 and ORS 183.341.

Need for the Rule

The proposed amendments are needed to update the inspection program criteria to reflect changes in operational criteria, inspection program protocol, and licensed fleet requirements.

Principal Documents Relied Upon

House Bill 2033, Senate Bill 509, the existing rules, automobile and motor vehicle manufacturer shop manuals and service manuals have been relied on.

Fiscal Impact Statement

Estimated fiscal impacts are that some motorists will experience savings. There should be no significant adverse economic impact on small businesses. Some small businesses will continue to economically benefit from the Department's operation of the inspection program. Three licensed fleets may be affected economically in that equipment currently used by those fleets will no longer be allowed to be used as part of DEQ's licensed fleet program.

Land Use Consistency Statement

These proposals do not affect land use.

VZ296

Publicly Owned and Permanent Fleet Vehicle[s] Testing Requirements

340-24-306 (1) All motor vehicles registered as government-owned vehicles under ORS 481.125 which are required to be certified annually pursuant to ORS 481.190 shall, as means of that certification, obtain a Certificate of Compliance.

(2) All motor vehicles registered as permanent fleet vehicles under ORS 481.186 which are required to be certified pursuant to ORS 481.190 shall, as means of that certification, obtain a Certificate of Compliance.

(3) [(2)]Any motor vehicle which is to be registered under ORS 481.125 or 481.186 , but is not a new motor vehicle, shall obtain a Certificate of Compliance prior to that registration as so required by ORS 481.190.

(4) [(3)]For the purposes of providing a staggered certification schedule for vehicles registered as government-owned vehicles ORS 481.125 or permanent fleet vehicles under ORS 481.186, shall except as provided by section (5), be on the basis of the final numerical digit contained on the vehicle license plate. Such certification shall be completed by the last day of the month as provided below (Last Digit and Month, respectively):

- (a) 1-----January;
- (b) 2-----February;
- (c) 3-----March;
- (d) 4-----April;
- (e) 5-----May;
- (f) 6-----June;
- (g) 7-----July;
- (h) 8-----August;
- (i) 9-----September;
- (j) 0-----October.

(5) In order to accomodate a fleet's scheduled maintenance practices, the Department may establish a specific separate schedule for vehicles registered as government-owned vehicles under ORS 481.125 or permanent fleet vehicles under ORS 481.186, if these vehicles are owned by fleets, licensed under the self-inspection program, OAR 340-24-340.

Light Duty Motor Vehicle Emission Control Test Method

340-24-310 (1) The vehicle emission inspector is to insure that the gas analytical system is properly calibrated prior to initiating a vehicle test.

(2) The Department approved vehicle information data form is to be completed at the time of the motor vehicle being inspected.

(3) Vehicles having coolant, oil, or fuel leaks or any other such defect that is unsafe to allow the emission test to be conducted shall be rejected from the testing area. The emission test shall not be conducted until the defects are eliminated.

(4) The vehicle transmission is to be placed in neutral gear or park position with the hand or parking brake engaged.

(5) All vehicle accessories are to be turned off.

(6) An inspection is to be made to insure that the motor vehicle is equipped with the required functioning motor vehicle pollution control system in accordance with the criteria of Section 340-24-320(3). Vehicles not meeting this criteria shall be rejected from the testing area without an emission test. A report shall be supplied to the driver indicating the reason(s) for rejection.

(7) With the engine operating at idle speed, the sampling probe of the gas analytical system is to be inserted into the engine exhaust outlet.

(8) The steady state levels of the gases measured at idle speed by the gas analytical system shall be recorded. Except for diesel vehicles, the idle speed at which the gas measurements were made shall also be recorded.

(9) Except for diesel vehicles, the engine is to be accelerated with no external loading applied, to a speed of between 2,200 RPM and 2,700 RPM. The engine speed is to be maintained at a steady speed within this speed range for a 10 to 15 second period and then returned to an idle speed condition. In the case of a diesel vehicle, the engine is to be accelerated to an above idle speed. The engine speed is to be maintained at a steady above idle speed for a 10 to 15 second period and then returned to an idle speed condition. The values measured by the gas analytical system at the raised rpm speed shall be recorded.

(10) The steady state levels of the gases measured at idle speed by the gas analytical system shall be recorded. Except for diesel vehicles, the idle speed at which the gas measurements were made shall also be recorded.

(11) If the vehicle is equipped with a multiple exhaust system, then steps (7) through (10) are to be repeated on the other exhaust outlet(s). The readings from the exhaust outlet[s] are to be averaged into one reading from each gas measured for comparison] , or the average reading from the exhaust outlets are to be compared to the standards of rule 340-24-330.

(12) If the vehicle does not comply with the standards specified in rule 340-24-[335] 330, and it is a 1981 [or newer] through 1983 Ford Motor Company [product] vehicle, the vehicle shall have the ignition turned off, be restarted, and have steps (8) through (11) repeated.

(13) If the vehicle is capable of being operated with both gasoline and gaseous fuels, then steps (7) through (10) are to be repeated so that emission test results are obtained for both fuels.

(14) If it is ascertained that the vehicles may be emitting noise in excess of the noise standards adopted pursuant to ORS 467.030, then a noise measurement is to be conducted in accordance with the test procedures adopted by the Commission or to standard methods approved in writing by the Department.

(15) If it is determined that the vehicle complies with the criteria of rule 340-24-320 and the standards of rule 340-24-330, then, following receipt of the required fees, the vehicle emission inspector shall issue the required certificates of compliance and inspection.

(16) The inspector shall affix any certificate of inspection issued to the lower left-hand side (normally the driver side) of the front windshield, being careful not to obscure the vehicle identification number nor to obstruct driver vision.

(17) No certificate of compliance or inspection shall be issued unless the vehicle complies with all requirements of these rules and those applicable provisions of ORS 468.360 to 468.405, 481.190 to 481.200, and 483.800 to 483.825.

Stat. Auth.: ORS Ch. 468

Hist: DEQ 89, f. 4-22-75, ef. 5-25-75, DEQ 139, f. 6-30-77,
ef. 7-1-77

Heavy Duty Gasoline Motor Vehicle Emission Control Test Method

340-24-315 (1) The vehicle emission inspector is to insure that the gas analytical system is properly calibrated prior to initiating a vehicle test.

(2) The Department approved vehicle information data form is to be completed at the time of the motor vehicle being inspected.

(3) The vehicle is to be in neutral gear if equipped with a manual transmission, or in "park" position if equipped with an automatic transmission.

(4) All vehicle accessories are to be turned off.

(5) An inspection is to be made to insure that the motor vehicle is equipped with the required functioning motor vehicle pollution control system in accordance with the criteria of rule 340-24-325.

(6) With the engine operating at idle speed, the sampling probe of the gas analytical system is to be inserted into the engine exhaust outlet.

(7) The steady state levels of the gases measured at idle speed by the gas analytical system shall be recorded. The idle speed at which the gas measurements were made shall also be recorded.

(8) [(7)]The engine is to be accelerated, with no external loading applied, to a speed of between 2200 RPM and 2700 RPM. The engine speed is to be maintained at a constant speed within this speed range for a sufficient time to achieve a steady-state condition whereupon the steady-state levels of the gases measured by the gas analytical system shall be recorded on the Department approved vehicle information form. The engine speed shall then be returned to an idle speed condition.

(9) [(8)]The steady-state levels of the gases measured at idle speed by the gas analytical system shall be recorded on the Department approved vehicle information form. The idle speed at which the gas measurements were made shall also be recorded.

(10) [(9)]If the vehicle is equipped with a multiple exhaust system, then steps (6) through [(8)] (9) are to be repeated on the other exhaust outlet(s). The readings from the exhaust outlets are to be averaged to determine a single reading for each gas measured in each step [(7) and (8).] (8) and (9).

(11) [(10)]The reading from the exhaust outlet, or the average reading from the exhaust outlets obtained in each step[(7) and (8)] (8) and (9), are to be compared to the standards of rule 340-24-335.

(12) [(11)]If the vehicle is capable of being operated with both gasoline and gaseous fuels, then steps (6) through[(8)] (9) are to be repeated so that emission test results are obtained for both fuels.

(13) [(12)]If it is ascertained that the motor vehicle may be emitting noise in excess of the noise standards adopted pursuant to ORS 467.030, then a noise measurement is to be conducted in accordance with the test procedures adopted by the Commission or to standard methods approved in writing by the Department.

(14) [(13)]If it is determined that the motor vehicle complies with the criteria of rule 340-24-325 and the standards of rule 340-24-335, then, following receipt of the required fees, the vehicle emission inspector shall issue the required Certificates of Compliance and inspection.

(15) [(14)]The inspector shall affix any certificate of inspection issued to the lower left-hand side (normally the driver side) of the front windshield, being careful not to obscure the vehicle identification number nor to obstruct driver vision.

(16) [(15)]No Certificate of Compliance or inspection shall be issued unless the vehicle complies with all requirements of these rules and those applicable provisions of ORS 468.360 to 468.405, 481.190 to 481.200, and 483.800 to 483.825.

(17) [(16)]Any motor vehicle registered on less than an annual basis pursuant to ORS 481.205(2) need not pass more than an annual inspection to assure compliance with ORS 481.190. Such vehicles shall be issued a Certificate of Compliance in a form provided by the Department stating that the vehicle passed inspection by the Department on a certain date and was in compliance with the standards of the Commission, and having no information to the contrary, presumes the continuance of such compliance at the date of the issuance of the Certificate through four consecutive quarterly periods.

Stat. Auth.: ORS Ch. 468
Hist: DEQ 136, f. 6-10-77, ef. 7-1-77

Light Duty Motor Vehicle Emission Control Test Criteria

340-24-320 (1) No vehicle emission control test shall be considered valid if the vehicle exhaust system leaks in such a manner as to dilute the exhaust gas being sampled by the gas analytical system. For the purpose of emission control tests conducted at state facilities, except for diesel vehicles, tests will not be considered valid if the exhaust gas is diluted to such an extent that the sum of the carbon monoxide and carbon dioxide concentrations recorded for the idle speed reading from an exhaust outlet is 8 percent or less, and on 1975 and newer vehicles with air injection systems 7 percent or less.

(2) No vehicle emission control test shall be considered valid if the engine idle speed either exceeds the manufacturer's idle speed specifications by over 200 RPM on 1968 and newer model vehicles, or exceeds 1,250 RPM for any pre-1968 model vehicle.

(3) (a) No vehicle emission control test for a 1970 through 1974 model year vehicle shall be considered valid if any of the following elements of the original factory installed pollution control systems have been disconnected, plugged, or otherwise made inoperative in violation of ORS 483.825(1), except as noted in section (5) or as provided by 40 CFR 85.1701-1709.

(A) Positive crankcase ventilation (PCV) system.

(B) Air injector reactor (AIR) system.

(C) Evaporative control system.

(b) No vehicle emission control test for a [1970] 1975 or newer model vehicle shall be considered valid if any element of the following factory-installed motor vehicle pollution control systems have been disconnected, plugged, or otherwise made inoperative in violation of ORS 483.825(1), except as noted in section (5) or as provided for by 40 CFR 85.1701-1709. Motor vehicle pollution control systems include, but are not necessarily limited to:

(A) [(a)] Positive crankcase ventilation (PCV) system.

(B) [(b)] Exhaust modifier system:

(i) [(A)] Air injection reactor system;

(ii) [(B)] Thermal reactor system;

(iii) [(C)] Catalytic converter system[- (1975 and newer model vehicles only)].

(C) [(c)] Exhaust gas recirculation (EGR) systems [- (1973 and newer model vehicles only)]

(D) [(d)] Evaporative control system

(E) [(e)] Spark timing system:

(i) [(A)] Vacuum advance system;

(ii) [(B)] Vacuum retard system.

(F) [(f)] Special emission control devices. Examples:

(i) [(A)] Orifice spark advance control (OSAC);

(ii) [(B)] Speed control switch (SCS).

(iii) [(C)] Thermostatic air cleaner (TAC).

(iv) [(D)] Transmission controlled spark (TCS).

(v) [(E)] Throttle solenoid control (TSC).

(vi) [(F)] Fuel filler inlet restrictors.

(vii) [(G)] Oxygen Sensor

(ix) Emission Control Computer

(4) No vehicle emission control test for a [1970] 1975 or newer model vehicle shall be considered valid if any element of the factory-installed motor vehicle pollution control system has been modified or altered in such a manner so as to decrease its efficiency or effectiveness in the control of air pollution in violation of ORS 483.825(2), except as noted in section (5). For the purposes of this section, the following apply:

(a) ~~The use of a non-original equipment aftermarket part (including a rebuilt part) as a replacement part is not considered to be a violation of ORS 483.825(2), if a reasonable basis exists for knowing that such use will not adversely effect emission control efficiency. The Department will maintain a listing of those parts which have been determined to adversely affect emission control efficiency.~~

(b) The use of a non-original equipment aftermarket part or system as an add-on, auxiliary, augmenting, or secondary part or system, is not considered to be a violation of ORS 483.825(2), if such a part or system is listed on the exemption list of "Modifications to Motor Vehicle Emission Control System Permitted Under California Vehicle Code Section 27156 granted by the Air Resources Board," or is on the list maintained by the U.S.

Environmental Protection Agency of "Certified to EPA Standards," or has been determined after review of testing data by the Department that there is no decrease in the efficiency or effectiveness in the control of air pollution.

(c) Adjustments or alterations of a particular part or system parameter, if done for purposes of maintenance or repair according to the vehicle or engine manufacturer's instructions, are not considered violations of ORS 483.825(2).

(5) A 1970 and newer model motor vehicle which has been converted to operate on gaseous fuels shall not be considered in violation of ORS 483.825(1) or (2) when elements of the factory-installed motor vehicle air pollution control system are disconnected for the purpose of conversion to gaseous fuel as authorized by ORS 483.825(3).

(6) The following applies:

(a) to 1970 through 1979 model year motor vehicles. When a motor vehicle is equipped with other than the original engine and [they] its factory installed vehicle pollution control systems, it shall be classified by the model year and manufacture make of the non-original engine and its factory-installed motor vehicle pollution control systems, except that when the nonoriginal engine is older than the motor vehicle any requirement for evaporative control system and fuel filler inlet restrictor and catalytic convertor shall be based on the model year of the vehicle chassis. Diesel (compression ignition) engine powered vehicles changed to gasoline (spark ignition) engine power shall be required to maintain that model years equivalent or better factory pollution control system, including, but not limited to, catalytic convertors, unleaded fuel requirements, and computer controls.

(b) to 1980 and newer motor vehicles. These motor vehicles shall be classified by the model year and make of the vehicle as designated by the original chassis, engine, and its factory-installed motor vehicle pollution control systems , or equivalent. This in no way prohibits the vehicle owner from upgrading the engine and emission control system to a more recent model year category including a diesel (compression ignition) power plant providing that all of the newer factory installed pollution control system is maintained .

Heavy Duty Gasoline Motor Vehicle Emission Control Test Criteria

340-24-325 (1) No vehicle emission control test shall be considered valid if the vehicle exhaust system leaks in such a manner as to dilute the exhaust gas being sampled by the gas analytical system. For the purpose of emission control tests conducted at state facilities, tests will not be considered valid if the exhaust gas is diluted to such an extent that the sum of the carbon monoxide and carbon dioxide concentrations recorded for the idle speed reading from an exhaust outlet is 8 percent or less.

(2) No vehicle emission control test shall be considered valid if the engine idle speed either exceeds the manufacturer's idle speed specifications by over 200 RPM on 1970 and newer model vehicles, or exceeds 1000 RPM for any age model vehicle.

(3) (a) No vehicle emission control test for a 1970 through 1974 heavy duty vehicle shall be considered valid if any of the following elements of the factory installed motor vehicle pollution control system has been disconnected, plugged, or otherwise made inoperative in violation of ORS 483.825(1), except as noted in section (5):

(A) Positive Crankcase

(B) Evaporative Emission System

(C) Air Injection System

(b) No vehicle emission control test for a [1970] 1975 or newer model vehicle shall be considered valid if any element of the following factory-installed motor vehicle pollution control systems have been disconnected, plugged, or otherwise made inoperative in violation of ORS 483.825(1), except as noted in section (5):

(A) [(a)] Positive crankcase ventilation;

(B) [(b)] Exhaust modifier system. Examples:

(i) [(A)] Air injection system

(ii) [(B)] Thermal reactor system

(iii) [(C)] Catalytic convertor system.

(C) [(c)] Exhaust gas recirculation (EGR) systems;

(D) [(d)] Evaporative control system;

(E) [(e)] Spark timing system. Examples:

(i) [(A)] Vacuum advance system;

(ii) [(B)]Vacuum retard system.

(F) [(f)]Special emission control devices. Examples:

(i) [(A)]Orifice spark advance control (OSAC);

(ii) [(B)]Speed control switch (SCS);

(iii) [(C)]Thermostatic air cleaner (TAC);

(iv) [(D)]Transmission controlled spark (TCS);

(v) [(E)]Throttle solenoid control (TSC);

(vi) [(F)]Fuel filler inlet restrictor.

(4) No vehicle emission control test conducted for a [1970] 1975 or newer model vehicle shall be considered valid if any element of the factory-installed motor vehicle pollution control system has been modified or altered in such a manner so as to decrease its efficiency or effectiveness in the control of air pollution in violation of ORS 483.825(2), except as noted in section(3). For the purposes of this section, the following apply;

(a) The use of a non-original equipment aftermarket part (including a rebuilt part) as a replacement part is not considered to be a violation of ORS 483.825(2), if a reasonable basis exists for knowing that such use will not adversely effect emission control efficiency. The Department will maintain a listing of those parts which have been determined to adversely affect emission control efficiency.

(b) The use of a non-original equipment aftermarket part or system as an add-on, auxiliary, augmenting, or secondary part or system, is not considered to be a violation of ORS 483.825(2), if such part or system is listed on the exemption list maintained by the Department.

(c) Adjustments or alterations of a particular part or system parameter, if done for purposes of maintenance or repair according to the vehicle or engine manufacturer's instructions, are not considered violations of ORS 483.825(2).

(5) A 1970 or newer model motor vehicle which has been converted to operate on gaseous fuels shall not be considered in violation of ORS 483.825(1) or (2) when elements of the factory-installed motor vehicle air pollution control system are disconnected for the purpose of conversion to gaseous fuel as authorized by ORS 483.825(3).

(6) For the purposes of these rules, a 1970 motor vehicle with an exchange engine shall be classified by the model year and manufacturer make of the exchange engine, except that any requirement for evaporative control systems shall be based upon the model year of the vehicle chassis.

**Criteria for Qualifications of Persons Eligible to Inspect
Motor Vehicles and Motor Pollution Control Systems and
Execute Certificates**

340-24-340 (1) Three separate classes of licenses are established by these rules:

- (a) Motor Vehicle fleet operations.
- (b) Fleet operation vehicle emission inspector.
- (c) State employed vehicle emission inspector.

(2) Application for a license must be completed on a form provided by the Department.

(3) (a) Each motor vehicle fleet operation license shall be valid through December 31 of each year unless revoked, suspended, or returned to the Department.

(b) Each vehicle emission inspector license shall be valid for two years from the last day of the month of issue, unless revoked, suspended, or returned to the Department.

(4) No license shall be issued until the applicant has fulfilled all requirements and paid the required fee.

(5) No license shall be transferable.

(6) Each license may be renewed upon application and receipt of renewal fee if the application for renewal is made within the 30 day period prior to the expiration date and the applicant complies with all other licensing requirements.

(7) A license may be suspended, revoked, or not renewed if the licensee has violated these rules or ORS 468.360 to 468.405, 481.800 to [483.820.] 483.825.

(8) A fleet operation vehicle emission inspector license shall be valid only for inspection of, and execution of certificates for, motor vehicle pollution control systems and motor vehicles of the motor vehicle fleet operation by which the inspector is employed on a full time basis, except:

A fleet operation vehicle emission inspector employed by a governmental agency may be authorized by the Department to perform inspections and execute Certificates of Compliance for vehicles of other governmental agencies that have contracted with that agency for that service and that contract having the approval of the Director.

(9) To [be licensed] initially receive or renew a license as a vehicle emission inspector, the applicant must:

(a) Be an employee of the Vehicle Inspection [Division] Program of the Department, or

(b) Be an employee of a licensed motor vehicle fleet operation.

(c) Complete application.

(d) Satisfactorily complete a training program conducted by the Department. Only persons employed by the Department or by a motor vehicle fleet operation shall be eligible to participate in the training program unless otherwise approved by the Director. The duration of the training program for persons employed by a motor vehicle fleet operation shall not exceed 24 hours.

(e) At the completion of this training program s [S]atisfactorily complete an examination pertaining to the inspection program requirements. This examination shall be prepared, conducted, and graded by the Department.

(10) To be licensed as a motor vehicle fleet operation, the applicant must:

(a) Be the owner of 100 or more Oregon registered in-use motor vehicles, or 50 or more publicly owned vehicles registered pursuant to to ORS 481.125.

(b) Be equipped with an exhaust gas analyzer complying with criteria established in rule 340-24-350.

(c) Be equipped with a sound level meter conforming to "Requirements for Sound Measuring Instruments and Personnel" (NPCS-2) manual, revised September 15, 1974, of this Department.

(11) No person licensed as a motor vehicle fleet operation shall advertise or represent himself as being licensed to inspect motor vehicles to determine compliance with the criteria and standards of rules 340-24-320 and 340-24-330.

GAS ANALYTICAL SYSTEM LICENSING CRITERIA

340-24-350 (1) To be licensed, an exhaust gas analyzer must:

(a) Conform substantially with either:

(A) All specifications contained in the document "Specifications for Exhaust Gas Analyzer System Including Engine Tachometers" dated July 9, 1974, prepared by the Department and on file in the office of the Vehicle Inspection Program of the Department,

(B) The technical specifications contained in the document "Performance Criteria, Design Guidelines, and Accreditation Procedures for Hydrocarbon (HC) and Carbon Monoxide (CO) Analyzers Required in California Official Motor Vehicle Pollution Control Stations," issued by the Bureau of California, and on file in the office of the Vehicle Inspection Program of the Department. Evidence that an instrument model is approved by the California Bureau of Automotive Repair will suffice to show conformance with this technical specification, or

(C) If a gas analytical system is purchased after January 1, 1982, the technical specifications contained in the document "The California Exhaust Gas Analyzer Specification - 1979" on file in the office of the Vehicle Inspection Program of the Department.

(D) Notwithstanding any of the above certifications, no license shall be issued or renewed for any battery powered exhaust gas analytical system after December 31, 1984.

(b) Be owned by the licensed motor vehicle fleet operation or the Department.

(c) Be span gas calibrated a minimum of once a month (at least every 30 calendar days) by licensed inspector. The calibration and the inspector's initials are to be recorded on the back of the exhaust gas analyzer's license for verification by the Department.

(2) Application for a license must be completed on a form provided by the Department.

(3) Each license issued for an exhaust gas analyzer shall be valid through December 31 of each year, unless returned to the Department or revoked.

(4) A license for an exhaust gas analyzer system shall be renewed upon submission of a statement by the motor vehicle fleet operation that all conditions pertaining to the original license issuance are still valid and that the unit has been gas calibrated and its proper operation

verified within the last 30 days by a vehicle emission inspector in their employment.

(5) Grounds for revocation of a license issued for an exhaust gas analyzer system include the following:

(a) The unit has been altered, damaged, or modified so as to no longer conform with the specifications of subsection (1)(a) of this rule.

(b) The unit is no longer owned by the motor vehicle fleet operation to which the license was issued.

(c) The Department verifies that a Certification of Compliance has been issued to a vehicle which has been emission tested by an analyzer that has not met the requirements of subsection (1)(c) of this section.

(6) No license shall be transferable.

(7) No license shall be issued until all requirements of section (1) of this section are fulfilled and required fees paid.



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. D, August 19, 1983, EQC Meeting

Request for Authorization to hold a Public Hearing on Proposed Amendments to the Motor Vehicle Emission Control Inspection Test Criteria, Methods, and Standards (OAR 340-24-300 through 24-350) Specifically Affecting the Pollution Equipment Visual Inspection, the Engine Exchange Policy, Test Method, and Licensed Fleet Policy.

Background

At the Environmental Quality Commission meeting of July 16, 1982, amendments to OAR 340-24-300 through 24-350 were approved. These amendments affected the vehicle emission control test procedure and made changes in the engine exchange policy. At that time, the report indicated that a scheduled yearly review of the operating rules was not necessary since the testing standards had been simplified and it appeared that pollution control technology on new motor vehicles had stabilized.

Some items in the rules, however, need to be revised to reflect legislative change and to improve specific program areas. The staff has completed the rules review and proposes changes in the following areas:

OAR 340-24-306 Include permanent fleet vehicles with non-expiring licenses in this section and provide alternative testing schedule for fleet operations.

OAR 340-24-310 Correct a reference error in the test method section.

OAR 340-24-315 Clarify a step in the inspection procedure.

OAR 340-24-320 and 325 Modify and simplify the requirements for underhood inspection on those cars and trucks manufactured prior to 1975, and modify the engine change criteria to specify policy for owners of diesel-powered vehicles who wish to install a gasoline engine in their vehicle.

OAR 340-24-340 Add requirements for periodic examination of all licensed inspectors, including those employed by licensed fleets. Also specifically indicate that violation of the State's anti-tampering statute is grounds for revocation of a license.

OAR 340-24-350 Remove from the approved lists any exhaust gas analyzers which are battery-powered.

A tentative date for public hearing, if the Commission grants authority, would be October 3, 1983. A proposed Statement of Need for rule making and Fiscal Impact are attached as Appendix A. A draft Notice of Public Hearing is attached as Appendix B. The proposed rule modifications are attached as Appendix C.

Alternatives and Evaluation

The following rule modifications are proposed:

OAR 340-24-306. Recently passed House Bill 2033 made a change in Oregon motor vehicle licensing law by changing the procedure for certification of vehicles registered as permanent fleet vehicles under ORS 481.186. Vehicles owned by large fleets can have non-expiring license plates. Prior to the legislative change, these vehicles were certified by the month and year of the original registration. HB 2033 provides that these vehicles may be certified within the year rather than within the 90-days schedule that ORS 481.190 provides for most other vehicles. This makes the permanent fleet category of vehicles very similar to vehicles that are classified as publicly-owned. Changes are proposed to OAR 340-24-306 to include this permanent fleet vehicle within that section of the rule.

When this rule was adopted, a staggered sequence for vehicle testing was established. The staggered sequence, based upon the last digit of the license plate, was chosen since there was no expiration date for the publicly owned license plates. Some licensed self-inspecting fleets, among them the post office and the United States General Services Administration, have indicated that this testing sequence creates scheduling conflicts in their normal fleet maintenance practices.

They have requested that they be allowed to establish a separate testing schedule. The statute simply requires annual certification for publicly-owned vehicles and yearly certification for permanent fleet vehicles. As such, any legitimate method of establishing a testing schedule would fulfill the statutory requirement. The proposed modification provides this alternative. It would only affect those fleets licensed by the Department for self-inspection.

OAR 340-24-340 Add requirements for periodic examination of all licensed inspectors, including those employed by licensed fleets. Also specifically indicate that violation of the State's anti-tampering statute is grounds for revocation of a license.

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They have requested that they be allowed to establish a separate testing schedule. The statute simply requires annual certification for publicly-owned vehicles and yearly certification for permanent fleet vehicles. As such, any legitimate method of establishing a testing schedule would fulfill the statutory requirement. The proposed modification provides this alternative. It would only affect those fleets licensed by the Department for self-inspection.

OAR 340-24-310. This section contains the emission test procedure. This procedure was modified last year and contains a special testing provision for 1981 and newer Ford Motor Company-manufactured vehicles. There is a reference to the standards to be applied. This reference is in error. It should refer to Section 24-330, the light-duty standards, rather than Section 24-335, the heavy-duty truck standards. Minor housekeeping wording changes are also proposed.

OAR 340-24-315. The staff is proposing a clarification in the test procedure for heavy-duty vehicles. The current regulation does not spell out the requirement that the initial readings from the emission test be recorded, though in practice this is done. The proposed change clarifies this step in the inspection procedure.

OAR 340-24-320(3, 4, 5) and 24-325(5). Staff is proposing reducing the stringency of the tampering inspection requirement on 1970-1974 and older vehicles. The result would be to ignore some changes made in emission equipment for vehicles older than 1975, rather than the current 1970 designation. This is a significant policy action. It could, however, be considered compatible with the Oregon Legislature's passage of SB 509, which exempts vehicles 20 years and older from all program requirements.

The rules currently require that all 1970 and newer vehicles be inspected for their original factory-installed pollution control equipment. The proposed rule would modify our enforcement stringency in the underhood inspection portion of the test to check only for the positive crankcase ventilation (PCV), air injection reactors (AIR), and evaporative emission control systems on 1970-1974 model year vehicles. No change in inspection procedures for newer vehicles is proposed. The effect of such a change would be:

- 1) There would be an increased pass rate for the 1970-1974 model year groupings of vehicles of about 12%. This could effectively raise our overall pass rate about 5%, boosting the current rate to about 70%. This group accounts for approximately 20% of our vehicle population and contains about 110,000 cars and light trucks.
- 2) Easing the underhood inspection requirement on the 1970-1974 grouping of vehicles should increase uniformity of the underhood inspections among the testing centers.

- 3) Customer conflict for owners of these older vehicles which have malfunctioning or missing pollution control equipment would be eased, since this point of confrontation would not be raised.
- 4) It would eliminate an incentive for avoiding the inspection program requirements.
- 5) Program staff has taken several surveys over the past few years that have indicated that these major parts are available (sometimes requiring special order). Some minor system components, however, are no longer available. This action should reduce the problem of parts availability.
- 6) Air quality compliance date schedules would not be affected since there are no tampering credits included in current air quality models and projections.

Recently, the U. S. Environmental Protection agency has released its draft report outlining credits available for tampering inspection. Maximum potential credit for tampering inspection would still be retained if the modifications proposed were implemented. The inspection program is currently failing about 15% of the 1970-1974 year vehicles for all equipment requirements. Failing vehicles for only PCV, AIR, and evaporation emission controls would drop the 15% rate to approximately 5%.

OAR 340-24-320(6) and 24-325(6). This is the engine change policy portion of the rules. A clarification of the rule is made for vehicle owners wishing to convert 1975-1979 model year diesel vehicles to operate on gasoline. This clarification includes provisions that if a gasoline engine is installed, all of the associated pollution control equipment including catalytic convertors and unleaded fuel requirements of the gasoline engine system must be met.

The second modification on the engine exchange policy applies to 1980 and newer vehicles. Two concerns have been raised by some individuals relating to diesel-powered vehicles and light-duty trucks. The wording in this paragraph of the rule would contain provisions that provide for diesel-to-gasoline conversions. The rule would clearly provide that a vehicle owner has flexibility in engine exchanges to use any equivalent or better 1980 or newer light-duty engine system. This change would not help some light-duty truck owners who had purchased vehicles which were under-designed to their transportation needs. The wording in this section is specifically intended not to allow a light-duty truck to be modified to a heavy-duty configuration and avoid the light-duty truck emission requirement.

OAR 340-24-340. The staff is proposing a change in this section which institutes a re-examination requirement for persons licensed to issue Certificates of Compliance. The proposed change incorporates existing program requirements for periodic examination of Department-employed inspectors and further extends this requirement to all persons licensed to issue Certificates of Compliance. It is proposed that after the initial class and examination, all inspectors be required to pass a re-examination every two years. The rationale for this requirement is to insure that these personnel maintain a current understanding of the requirements and policies for issuing Certificates of Compliance.

The staff is proposing that a violation of ORS 483.825, the State's anti-tampering statute, be specifically included as a reason for revocation of a fleet or inspector license. It should be noted that a violation of this statute would still be grounds for revocation of a license but that this language change will emphasize that fact. Additionally, a reference to the program's status would be changed from "Division" to "Program" to be consistent with current nomenclature.

OAR 340-24-350. The staff proposes deleting from the approved list specific exhaust gas analyzers currently approved for licensed fleet use. All analyzers purchased before January 1, 1982 must have been "BAR-74" approved. The BAR designation references California Bureau of Automotive Repair specifications for exhaust gas analyzers used in licensed garages doing emission inspections in California. Those purchased after January 1, 1982 must be BAR-80 approved. BAR-80 is the current state-of-the-art specification. On the original BAR-74 listing, there are four brand-named analyzers which were approved but which have had a poor "in-service" history. These exhaust gas analyzers are battery-powered, and this is probably one of the major contributing factors in their poor service history. The "in-service" history of these units in terms of reliability, accuracy, repeatability, and serviceability are such that it is the staff's recommendation that they not be recognized as approved equipment for the purposes of the licensed fleet program.

The four units, KAL-EQUIP, NAPA, STEWART-WARNER, and DELCO, are in essence the same unit with different brand names. These brands have been out of production for several years. Three of 45 licensed fleets currently use these exhaust gas analyzers. To provide adequate lead time for these fleets to arrange replacement, the effective date of this change is proposed as January 1, 1985. This time frame would coincide with the annual fleet renewal period. This action will

require that the three fleets purchase new analyzers if they wish to maintain their licensed fleet status after 1984.

Summation

The staff has proposed modification to the Vehicle Inspection Program operating rules in several areas. These areas include the testing method, inspection procedures, and equipment requirements for licensed fleets. Some of the changes are relatively minor, changing a reference error and detailing a step in the inspection procedure. The change in underhood inspection procedures and engine change is the most significant policy action proposed. This action does not affect the projected ambient air compliance dates but will result in an overall increase in vehicle pass rate of about 5%. It would ease administrative burden on vehicles which are older than the 1975 model year. These changes would also clarify the engine change policy for the newest category of vehicles.

The other changes proposed would affect licensed fleets. One change would allow a separate inspection schedule for licensed fleets. Another change would require that the licensed fleet inspectors be re-examined every three years in order to maintain their inspector status. And the third change would require that three of our 45 licensed fleets update their exhaust gas analyzers. The analyzers that staff is proposing be removed are obsolete and have an unsatisfactory record for reliability and serviceability within the exhaust gas analyzer industry. Adequate lead time is proposed for those fleets to acquire new instrumentation.

Director's Recommendation

Based upon the Summation, it is recommended that a public hearing be authorized.

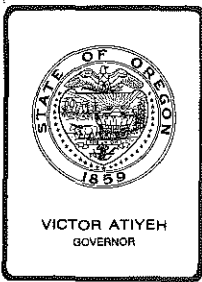
Bill

William H. Young

Attachments

- A. Appendix A, Statement of Need and Fiscal Impact
- B. Appendix B, Notice of Public Hearing
- C. Appendix C, Proposed Rule Modifications

VZ291
WPJasper:ahc
229-5081
July 26, 1983



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: Acting Director
Subject: Agenda Item No. J, November 18, 1983, EQC Meeting

Informational Report on Noise Study of Jackson County's Drag Strip at White City

Background

Jackson County owns and operates a motor racing facility, Jackson County Sports Park, near White City. The Park includes a modern drag strip that held its first race event in 1979. Since that time, the Park has become a popular drag race facility, has added lights for nighttime events in 1982, and has grown from two scheduled events in 1979 to 16 events (10 nighttime) in 1983. The quality of Jackson County Sports Park's (JCSP) drag racing facility, although not serving a large nearby population, is not equaled by any other drag strip closer than Portland or Sacramento.

The Department's noise control rules for motor racing became effective in 1982. This rule mitigates noise impacts from drag racing events by requiring the installation of racing mufflers on most categories of race vehicles and establishing curfew hours for operation. The rule applies uniformly to all Oregon facilities and thus provides consistent treatment to competitors and facility owners.

The drag racing events at Jackson County's strip have not complied with the muffler requirement of the noise control rules. During the 1982 race season, the County initially claimed additional time was needed to develop the capability to comply, although the rule had been adopted in November 1980 with a 1982 effective date to provide adequate lead time. Additional exceptions from the muffler requirement were granted by the Department on a case-by-case basis for the entire 1982 season to provide time for the Department to consider a request to accept a "noise suppression berm" as meeting the intent of the rule and thus making vehicle mufflers unnecessary. An earthen berm, approximately 20 feet in height, shields portions of the drag strip from some of the adjacent neighborhoods. The Department and its citizen Motor Sports Advisory Committee believed the berm did not meet the intent of the rule. Therefore, a variance was sought by the County.

On May 20, 1983, the Commission approved a variance from the muffler requirement at Jackson County's drag strip during daylight hours (1/2 hour past sunset) for events held during the 1983 racing season. The County's variance request was based upon the claimed adequacy of the noise berm and the claimed economic impact of strict compliance. The Commission found that "based on information available at [the] time, strict compliance with the muffler requirement [was] inappropriate at the Sport Park's drag strip because the presence of a substantially effective noise berm renders unreasonable the requirement that each competitor also add mufflers." The Commission directed staff to conduct a study of:

- a) The effectiveness of the Jackson County Sports Park noise suppression berm.
- b) The effectiveness of external noise control devices that could be incorporated into motor racing facilities.
- c) The noise impact of drag race activities at the Sports Park on noise sensitive property in the vicinity of the track.
- d) The economic impact of mufflers on race competitors.
- e) The economic impact to Oregon race facilities due to the reluctance of Oregon and non-Oregon competitors to comply with the muffler requirements.

The Commission requested a report on the results of this study with recommendations on:

- a) The need for rule amendments to recognize the benefits of external noise control devices at motor race facilities.
- b) The need for rule relaxation to address any severe adverse economic impacts.
- c) The need for continued variances at the Jackson County Sports Park.

Discussion and Evaluation

General Discussion of External Noise Control

Berms, walls and barriers are probably the most effective external noise control devices to use at motor racing facilities. These devices must be placed between the noise source (the race track) and the receiver (primarily residences). These devices must be of sufficient density to prevent significant amounts of sound from penetrating through the obstruction. Therefore, the sound must diffract around or over the device to reach the receiver.

In order for a noise barrier to be effective, it must be located either close to the noise source or close to the receptor. Barriers become more effective as height is increased, up to a point of maximum effectiveness, which is approximately 15 dBA for most practical applications. Receptors located near the ends of a barrier are provided less noise reduction due to flanking effects where sound travels around the ends rather than over the top of the barrier. Also, any receptor not shielded (approximately line-of-sight) from the source by the barrier will be provided no noise reduction. Thus, the barrier must be designed to shield all receptors of interest from the sound source at any location on the racing surface of the track.

In applications at motor sports facilities, noise berms and walls are somewhat less effective due to the typical spectral content of sound from racing engines. Most race engines produce maximum sound energy in the lower frequencies (20 to 300 Hertz). Barriers are less effective at lower frequencies; thus, they are not fully effective in controlling this sound source.

Vegetation, primarily trees, has often been suggested as a method to control noise, but its effectiveness is somewhat limited. Studies have shown that a 100-foot buffer zone of densely forested land can reduce noise levels by 5 to 10 dBA. However, trees are less effective in reducing low frequency sound than higher frequencies and thus have a disadvantage in controlling motor racing noise.

A certain amount of noise control can be achieved when developing a new motor racing facility. This is especially true if a site can be chosen that can take advantage of existing terrain and vegetation to reduce noise levels. For example, a hill between the race track and sensitive receptors may act as a noise berm if its height and location are proper. In addition, an existing stand of trees may be used to reduce noise without the ten-to-twenty-year delay time needed for new plantings to develop adequately.

Importance of Jackson County Sports Park Berm

The drag strip at Jackson County Sports Park is a one-quarter-mile (1320 feet) long asphalt track that terminates into an uphill deceleration section with several return roads to the pit area. A drag race is an acceleration contest between two race vehicles from a standing start over the straight-line one-quarter mile section.

The JCSP drag strip is orientated such that race vehicles are starting at the north end of the strip and accelerating toward the south. Figure 1 illustrates the Park layout. An earthen berm was constructed around the start point and along the west side of the strip to a point approximately 800 feet from the start. The berm is approximately 20 feet in height and varies between 165 to 225 feet from the track. Thus the effectiveness of the berm is highest for

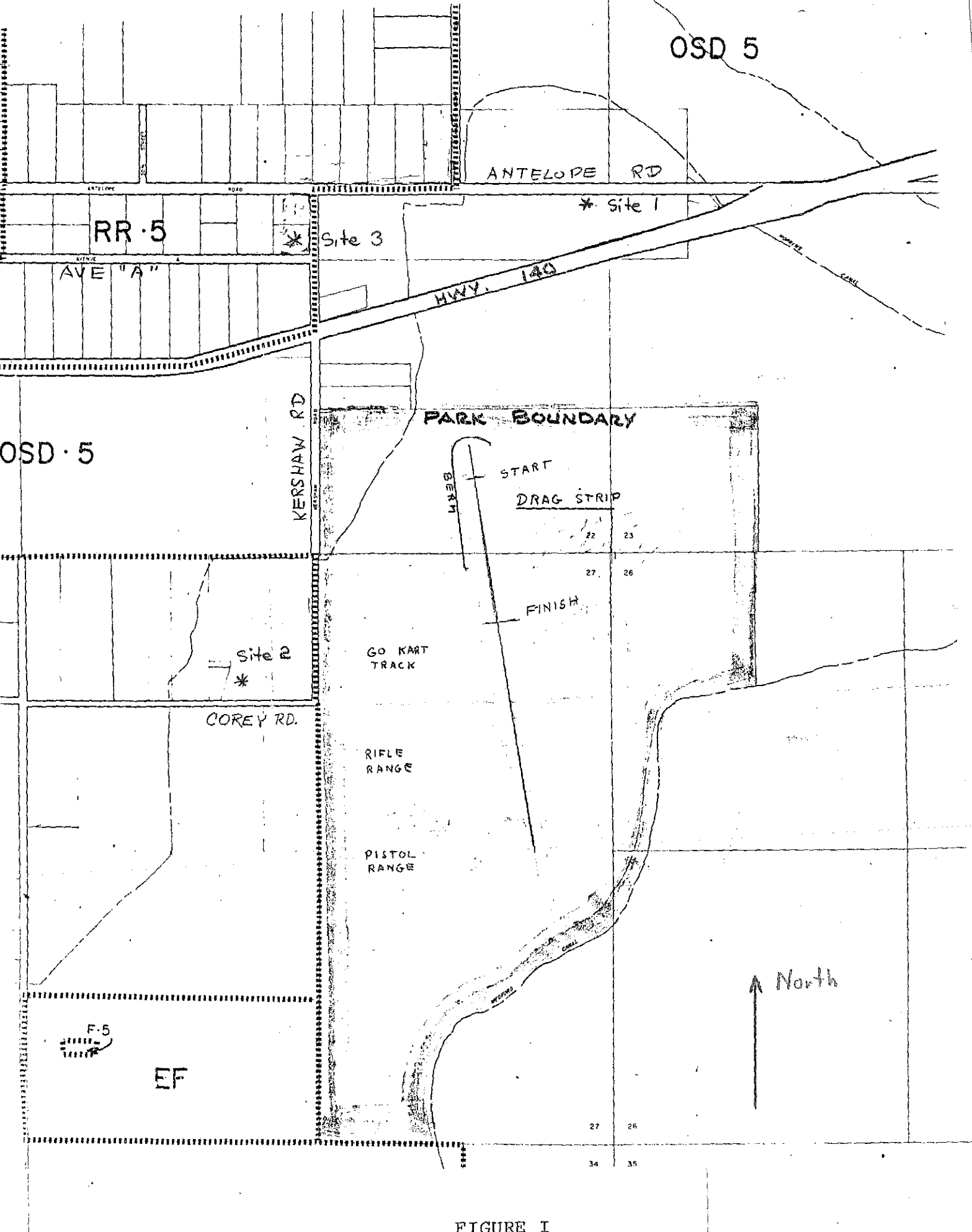


FIGURE I

properties northwest of the Park. Other locations may receive benefits from the berm only while the vehicles are at the start point or during the initial portion of the race. For example, properties at the east end of Antelope Road (Site 1) lose berm effectiveness after vehicles travel 100 feet from the start down the strip. Properties located on Corey Road (Site 2) lose berm effectiveness after vehicles travel 800 feet down the 1320 feet long strip.

Properties that are fully shielded by the berm receive a benefit of approximately 10 dBA noise reduction by the berm. Site 3 at Kershaw Road and Avenue "A" is an example of an area receiving maximum benefit from the berm. The 10 dBA reduction factor was calculated and verified with limited field data. The analytical evaluation of berms is well documented and thus the calculated noise reduction factors are considered accurate.

Measured Noise Impacts

Noise data was measured at several White City receptors between 8 p.m., Thursday, September 1, 1983 and 9 a.m., Sunday, September 4, 1983. On Saturday evening, September 3, a major drag race event was held at the Jackson County Sports Park. Continuous data was taken at Site 1 and Site 2. Site 1 is a residence in the 4800 block on Antelope Road which lies approximately 2500 feet northeast of the strip and is representative of an area receiving benefits of the noise berm only during the initial portion of the drag race. Site 2 is a residence near the intersection of Corey and Kershaw Roads. This site is approximately 2200 feet west of the drag strip and is shielded by the berm, except for the final 500 feet of the 1320 foot long race track. These two monitoring locations are noted on Figure 1.

The ambient noise at Site 1 on Antelope Road is influenced primarily by traffic on Highway 140 and very limited local traffic on Antelope Road which is dead-ended approximately one-half mile east of this site. Typical late-night and early-morning background (L_{90}) sound levels were measured at 27 to 30 dBA. Typical mid-day background L_{90} levels were 35 to 40 dBA. Truck traffic on Highway 140 caused occasional peak levels of approximately 50 dBA with smaller vehicles, cars and motorcycles, causing peaks of approximately 40 dBA. Thus, this site may be characterized as a quiet rural residential area that is influenced by a minor State highway approximately 500 feet from the home. The highway traffic noise pattern is typical in that the daytime traffic levels (L_{10}) are approximately 10 dBA greater than nighttime levels.

The drag race event held during the sound survey included a large group (73) gasoline-powered automobiles, a group of eleven alcohol-powered "funny" cars and two "jet" cars powered by aircraft-type engines. The noise control rules exempt "funny" cars and "jet" cars

due to current inability to muffle these vehicle categories. Jet cars are required, under these rules, to race prior to 10:00 p.m. to limit nighttime impacts. Therefore, a cross-section of various categories of race vehicles were measured during this event. It should also be noted that the event continued the following night (September 4th) with the same vehicles competing.

Following are typical values of noise exposure at Site 1 during the event held from 5:00 p.m. to 11:00 p.m. on Saturday, September 3, 1983:

Site 1 Drag Race Levels

<u>Vehicle Type</u>	<u>Peak Levels, dBA</u>
Jet Cars	80-85
Funny Cars	75-90
Gas Cars	65-80

Both the jet cars and funny cars were special features at this event. The jet cars are primarily exhibition vehicles and are not, in reality, in direct competition. During the available four hour period on September 3rd, the jet cars (two at a time) operated three times (6:04, 7:56, and 9:56 p.m.).

The funny cars are also exhibition-type vehicles, although they do compete in elimination races for prize money. This event was advertised as including 16 funny cars; however, only eleven of these vehicles operated on this date. Funny car operations began at approximately 7:20 and 9:00 p.m. and lasted 40 to 60 minutes per session.

The "gas-powered" vehicles included several categories of cars that ranged from modified, almost street-legal, to professional-type drag race cars. Naturally, these cars produced a wide variation of noise emissions and therefore, some of the "quieter" vehicles were not measured at the monitoring equipment located at Sites 1 and 2 due to sensitivity settings needed to assess the "louder" vehicles. Levels measured at Site 1 ranged from approximately 65 to 80 dBA due to operations of the "gas-powered" types of race cars.

A comparison of ambient sound levels and levels due to the drag race event are shown in the following table. Note that this event was held in the "evening" period while a number of events at this facility are also held during the "mid-day" time period.

Site 1 Ambient Levels, dBA

<u>Description*</u>	<u>Late-Night</u>	<u>Morning</u>	<u>Mid-Day</u>	<u>Evening</u>	<u>Race</u>
L90	28	37	38	35	39
Leq	47	48	52	53	62
L1	59	58	64	62	76
L.1	61	62	67	67	84

*Descriptions used are:

- L90 = 90 percentile during a 60 minute sample period
- Leq = equivalent energy level during the period
- L1 = one percentile
- L.1 = one-tenth percentile

Except for the background level (L90), the race event caused significant increases of the ambient sound environment at this site. Increased levels of 10 dBA are generally recognized as significant and mitigation is needed. A 10 dBA increase is perceived as twice as loud and a 20 dBA increase is perceived as four times as loud. In this case, increases range from 9 to 17 dBA when compared with a non-racing evening period.

Site 2, near the intersection of Corey and Kershaw Roads, is another quiet rural residential area that is primarily influenced by local traffic on these two roads. This site is also impacted, but within DEQ standards, by the Sports Park's shooting range that was observed to receive frequent use throughout the daytime hours. Typical nighttime background sound levels (L90) were measured at 26 to 30 dBA and daytime levels were measured at 35 to 40 dBA.

Drag race levels caused by the event held the evening of September 3, 1983 and measured at Site 2 are shown below:

Site 2 Drag Race Levels

<u>Vehicle Type</u>	<u>Peak Levels, dBA</u>
Jet Cars	77-84
Funny Cars	73-81
Gas Cars	55-77

A comparison of ambient sound levels and levels due to the race event measured at Site 2 is shown below:

Site 2 Ambient Levels, dBA

<u>Description</u>	<u>Late-Night</u>	<u>Morning</u>	<u>Mid-Day</u>	<u>Evening</u>	<u>Race</u>
L90	27	36	37	42	44
Leq	36	42	47	47	57
L1	46	52	54	52	67
L.1	50	57	69	56	79

Race levels at this site caused increases of 10 to 23 dBA above the same noise levels measured on a non-race evening. These impacts are significant and indicate a need for mitigation.

Community locations receiving full benefits from the berm at the Sport Park are also impacted during drag race events. Complaints have been received from citizens living near the intersection of Kershaw Road and Avenue "A". This site is northwest of the drag strip and race vehicles are shielded by the berm along the length of the one-quarter mile race track. It may be assumed that this location receives impacts approximately 5 to 10 dBA less than Site 1 on Antelope Road. Evaluation of the data gathered during the sound survey verifies the concerns raised by complainants about drag race noise. As the ambient sound levels are low, the operation of the drag strip intrudes into the low background and is thus annoying. Staff observations at monitoring sites during the September 3rd race event substantiated the recorded data. The amplitude and tonal characteristics of un-muffled engine noise was very obvious in the adjacent neighborhood during the event. It is believed that each race car was aurally detected during its operation with only a variation in amplitude between vehicle types. In addition, the public address system could be detected at Site 1. At Site 2, on Corey Road, the information content of the public address system announcements could be understood.

It has been shown that people living in rural residential areas, similar to White City, want daytime noise levels of 35 dBA and nighttime levels of 25 dBA. People in these areas will accept, without undue complaint, daytime levels of 35-45 dBA and nighttime levels of 25-35 dBA. This criteria is representative of the ambient levels measured at Sites 1 and 2. However, during racing activities, these criteria are exceeded and thus this activity becomes unacceptable. Race noise levels approaching 90 dBA are very intrusive in an environment that is normally 35 to 45 dBA and even the gas powered vehicles producing levels of 65 to 80 dBA cause very objectional intrusions and resulting annoyance.

Perhaps the most serious impact caused by short duration noise, as caused by drag racing, is its affect on sleep. Analysis of the data measured at Site 1 indicates that funny cars would awaken 40 percent of the population, jet cars awaken 32 percent and gas powered cars

awaken 28 percent of the population subjected to sound levels of this magnitude. The DEQ regulations allow weekend racing to progress until 11:00 p.m., although jet cars are prohibited past 10:00 p.m. Naturally, a segment of the population is trying to sleep during these hours.

Another measurable effect of the drag race noise is its impact on communication activities. Communication interference will occur at levels above 55 dBA. If the duration of the noise is short, the overall information content being commented will be maintained. However, when durations are long enough to obscure several words of a sentence, the entire sentence will not be understood. Typical durations of drag race noise are approximately ten seconds. Such durations can obscure entire sentences, thus causing significant impacts to communication. These impacts would become evident in face-to-face conversations, telephone usage, and radio or television listening.

Strict compliance with the muffler requirements would provide substantial relief to impacted residents. The muffler regulation provides approximately 10 dBA additional reduction to all gas powered drag race vehicles. This noise level reduction would result in a 50% reduction in sleep impacts and communication impacts. Although the noise caused by funny cars and jet cars would remain unchanged, only four of the sixteen race events scheduled in 1983 also included limited numbers of funny or jet cars. Therefore, benefits of the muffler rule would be evident at all events, especially those without unmuffled vehicles scheduled.

Impact on Competitors

Investigation by staff of the economic impact of the muffler rule on competitors indicate little if any significant impact. Most competitors have the capability to install exhaust piping and associated mufflers needed for compliance. Racing muffler list prices are \$20 to \$50 each, although some models may be more or less expensive. It is believed this incremental cost added to the overall cost of involvement in this sport are minor. Most objections from competitors are not related to cost of compliance but have been directed more toward need and the belief that noise controls would impact performance. These objections have not proved to be valid. Two other major Oregon drag strips have strictly enforced the muffler standard without serious impacts on the competitor.

It has been claimed that the muffler regulation is unfair to non-Oregon residents as they do not have similar requirements at their local drag strips. At a public hearing held on February 2, 1983, a member of the Humbolt Del Norte Timing Association of Northern California stated that their members would not attend races at Jackson County if

mufflers were required. Their position was based on safety and effectiveness of the berm and not the cost of compliance.

Impact on Race Facilities

Some concern has been raised on the effect of granting a continuing variance to Jackson County from the muffler requirement on other motor race facilities. It may be claimed that both Oregon and non-Oregon tracks, as well as JCSP, may be economically impacted by the muffler variance.

Jackson County, in their request for a variance dated March 15, 1983, noted they rely on California participants and patrons for a significant portion of their opportunity to generate revenues. They also noted their records indicated that approximately 18.5% of their participants reside outside of Oregon.

In order to assess the impact of non-Oregon participants at this facility, on June 7, 1983, staff requested Jackson County to submit information needed to assess economic impacts. Requested was competitor application forms for each 1983 drag race event, including competitor name, address, date and class of race vehicle. In addition, revenue information including paid attendance, entry fees collected, other income, expenses, and profit or loss, was requested.

On October 13, 1983, the Department received revenue information on eleven drag race events held at JCSD during 1983. (Attachment A). Net race-day income, excluding annual salaries and other overhead expenses, ranged from a slight loss (\$29) to a profit of \$18,000 for a major two-day event. No information was received on the residence locations of competitors; however, the average number of entries at the minor (one-day) events was 57, while the two major (two-day) events averaged 83 entries. Average paid attendance for minor events was 321, while the two major events drew an average of 3,412 spectators. Without the requested information on competitor residence locations, it is difficult to fully assess the impact of the current muffler variance in Oregon and California drag strips.

An evaluation was conducted on two drag strips located in northern California. One of these was at the Samoa Dragstrip located near Eureka, on the California coast. This facility is an undeveloped dragstrip that contains a small elevated platform as a timing tower and a grandstand with a capacity of 75 to 100 people according to Eureka Parks and Recreation Department. No lights or other improvements were evident at this track. During 1983, approximately 10 drag race events were scheduled here.

From Medford, Eureka is located approximately 200 miles over a very slow road, the Redwood Highway. Travel time is approximately 5 hours

which could be increased when towing a race car.

The other California facility evaluated was the Redding Dragstrip located on an alternate taxiway at the Redding Airport. This facility is not developed except for the installation of lights for nighttime racing. No timing tower nor grandstands were evident. According to the track spokesmen, they schedule 6 to 8 events per year; however, in 1983 they held only 3 to 4 races due to overall economic conditions and the need for repair of their timing equipment. He also noted that 5 to 6 local competitors travel to the Jackson County track for major events. Redding is located approximately 160 miles south of Medford on Interstate 5. Travel time is approximately 3 hours and the road is good, except for some very steep grades that could be difficult while towing a race vehicle.

The drag strip at Jackson County Sports Park is a highly improved facility that opened in 1979. In 1980, a three-story timing tower was built that includes office space, two interior observation and control areas, and a rooftop observation deck. In 1982, lights were added for nighttime drag race events. The County operates the track with a full-time manager. Grandstand capacity is approximately 2,000 and seating on the berm provides an additional capacity for approximately 3,000 spectators. Sixteen events were scheduled in 1983 with two major, 2-day events that included funny and jet car attractions.

The Woodburn Dragstrip, located in Woodburn, Oregon is approximately 235 miles north of Medford on Interstate 5 highway. This privately owned and operated facility is well developed and includes a timing tower, grandstands and lights for nighttime events. Approximately 40 drag race days are scheduled at this track each year. This track has maintained strict compliance with the muffler requirements, beginning with the 1982 race season. Five drag race events (7 race days) were granted special event exceptions from the muffler requirements during the 1983 race season to provide for "national" type racing events. This track primarily serves the Portland, Salem and Eugene population centers.

Portland International Raceways, located in north Portland, is approximately 270 miles north of Medford. This facility is owned and operated by the City of Portland and is highly improved, with timing tower, lights and grandstands. Approximately 40 drag race days are scheduled each year while 4 events (6 days) were granted muffler exceptions during the 1983 race season. This facility has strictly complied with the muffler requirements since the beginning of the 1982 race season. The track primarily serves the Portland area and attracts a large number of competitors from Clark and Cowlitz Counties, Washington. The nearest Washington drag race facility is Seattle International Raceway at Kent, approximately 150 miles north of Portland. This facility does not require mufflers on drag race vehicles.

A review of Oregon drag race facilities indicates the muffler rule has not had a severe adverse economic impact on their operations. The Portland facility is able to attract competitors that could race at Kent, Washington without muffler restrictions. These competitors apparently would rather comply than drive 100 to 150 miles to race at an un-controlled facility.

The Woodburn facility may receive adverse economic impacts while the Jackson County facility is granted a variance from the muffler requirements. Competitors between Roseburg and Salem may be attracted to the Jackson County facility due to the lack of muffler requirements and thus place the Woodburn facility at a economic disadvantage in attracting these racers. Therefore, consistent statewide standards were adopted to maintain equality among track operators and competitors alike.

Staff believes that the majority of drag race competitors would prefer not to comply with muffler regulations. However, they are also subjected to a variety of other rules in order to operate their race cars at drag strips. The muffler requirement is another such requirement that has been accepted by most Oregon motor sports competitors as necessary to maintain their sport.

The Portland and Woodburn drag strips began a muffler implementation program during the 1981 race season. The rule was approved in November 1980 and effective on January 1, 1982, thus providing one full race season to inform competitors of the new requirements and initiate compliance plans. The Jackson County facility failed to take advantage of this phase-in period and therefore, both local competitors and the track management were not ready, physically or mentally, to implement the muffler regulations.

Need for Rule Amendments or Variances

The Commission has requested recommendations on the need for amendments to the motor sports noise control rules to recognize the benefits of external noise control devices at race facilities or to address any severe adverse economic impacts.

Staff does not believe the rule should be amended to address the benefits of external noise control devices such as noise berms, walls or plantings. These devices do provide additional control of track noise beyond the muffler requirement but are difficult to quantify. For example, an external control device may only be effective for a portion of the adjacent population, as the Jackson County berm. It does not seem reasonable to waive other noise control requirements unless the entire population is benefited by the device. External controls should be primarily encouraged to augment the minimum controls imposed by the State rules. In areas without adequate open

space or noise compatible buffer zones, external controls should be encouraged. The addition of external noise controls should thus be viewed as a method to gain additional buffer zone area rather than a substitute for the uniform controls that are applied to all facilities, notwithstanding the local conditions.

Staff has not been able to determine any significant adverse economic impact due to this noise control rule. The cost of compliance to the competitor is minimal. The track operators are not burdened with excessive monitoring and reporting to comply with the rule. The reluctance of out-of-state competitors to add mufflers does exist but it is highly speculative whether facilities would be boycotted due to this requirement. The Portland track receives approximately 30 to 40 percent of its competitors from Washington who comply with the muffler rule. The attraction of California competitors to Jackson County is primarily because the track is "one of the finer drag race facilities in the country." (October 1983 Hot Rod magazine). Staff does not believe competitors, that now use the Jackson County facility, would boycott the track because of muffler requirements.

The need for a continued variance from the muffler requirements at Jackson County Sports Park does not appear to be justified based on the information developed in this study and submitted in this report. The noise berm at the drag strip does provide noise reductions of approximately 10 decibels to some residents but others receive very little benefit from the berm. Sound studies indicate that residents are adversely impacted by drag race noise and the addition of mufflers would mitigate these impacts by approximately 50 percent. Mufflers applied to drag race vehicles have been found to be a reasonable control device that is accepted at other Oregon motor sports facilities and would benefit the public living near the Jackson County facility.

Summation

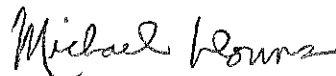
The following facts and conclusions are offered:

1. The Commission granted a variance from the muffler requirements of OAR 340-35-040 to Jackson County Sports Park's drag strip for the 1983 racing season.
2. Staff was directed to report to the Commission on a noise study of the drag strip and make recommendations on the need for rule amendments and continuation of the variance.
3. The earthen berm at the strip provides an approximately 10 decibel noise reduction to properties fully shielded, while other properties receive lesser or no benefits from the berm.

4. Berms and walls are the most effective noise barrier, although extensive vegetation can be beneficial (5-10 dBA) if plantings are of adequate depth and height.
5. Background noise levels in the community impacted by the drag strip are very low at approximately 35 to 40 dBA during mid-day and evening periods.
6. Drag race noise in the community ranges from 65 to 90 dBA during operations by un-muffled vehicles at sites receiving partial benefits from the noise berm.
7. Drag race noise intruding the low background levels in the community causes speech interference and sleep disruption.
8. Strict compliance with the muffler requirement could reduce impacts to communication and sleep up to 50 percent in the affected areas.
9. The muffler requirement causes little adverse economic impact to the competitor as cost is not significant and no claims at other Oregon tracks have been voiced about the excessive cost of the requirement.
10. Competitors from states adjacent to Oregon should cause no significant adverse impact to the Jackson County track as the large number of Washington residents that compete at the Portland drag strip have voiced no objection to the noise control requirements and it is believed the northern California competitors would otherwise be attracted to the quality facility at Jackson County, notwithstanding the muffler requirements.
11. A continued variance from the muffler requirement at the Jackson County drag strip could have an adverse economic impact on other Oregon drag strips.
12. Staff does not believe justification has been found to extend the variance to Jackson County nor is it necessary to amend these rules to either recognize the benefits of external noise control devices or to address any economic impact of these rules.

Acting Director's Recommendation

It is recommended that the Commission accept this informational report.



Michael J. Downs

Attachments: A. Revenue Information From Jackson County
JOHN HECTOR:a
229-5989
October 28, 1983
NA3852



JACKSON COUNTY

Attachment A
Agenda Item
Nov. 18, 1983
EQC Meeting

Parks and Recreation Department

COURTHOUSE

~~800 East Stewart Avenue~~, Medford, Oregon 97501 (503) 776-7001

October 5, 1983

OCT 10 Recd

Noise Pollution Control

Mr. John Hector
Department of Environmental Quality - NPC
522 S.W. 5th Avenue
Portland OR 97207

Dear John:

I had full intentions of getting the enclosed information to you much earlier. However, due to an unexpected out-of-town meeting, a delay was caused.

Our normal mode of operation has caused some information to be impossible to determine for many of our events this season. Hopefully, you will find what can be presented at this time is useful.

Revenue Information:

Date:	4/10/83	Event:	Practice
Paid attendance:	599 =		\$2,883
Entry fees:	NA =		-0-
Other income (approx)			\$ 120
Race day expenses (approx)			\$1,250
Race day net (approx)			\$1,753

Date:	4/24/83	Event:	Team Points
Paid attendance:	199 =		\$1,106
Entry Fees	50 =		905
Other Income (approx)			130
Race Day Expenses (approx)			1,745
Race Day Net (approx)			396

Date:	5/22/83	Event:	Team Points
Paid Attendance:	153 =		\$ 830
Entry Fees	58 =		1,045
Other Income (approx)			150
Race Day Expenses			1,975
Race Day Net			72

Date:	6/4/83	Event:	KBOY Streetnationals
Paid Attendance:	911 =		\$3,975
Entry Fees	30 =		750
Other Income (approx)			400
Race Day Expenses (approx)			1,960
Race Day Net (approx)			2,747

Date:	6/18/83	Event:	Team Points
Paid Attendance:	183 =	\$	991
Entry Fees	59 =		1,040
Other Income (approx)			125
Race Day Expenses (approx)			2,030
Race Day Net			126

Date:	7/2&3/83	Event:	Pepsi-Challenge Funny Car Championship
Paid Attendance:	3733 =	\$	29,018
Entry fees	93 =		3,900
Other income (approx)			3,000
Race Day Expenses (approx)			17,920
Race Day Net (approx)			18,000

Date	7/16/83	Event:	Team Points
Paid Attendance:	185 =	\$	974
Entry Fees	66 =		1,155
Other Income (approx)			125
Race Day Expenses (approx)			2,030
Race Day Net (approx)			224

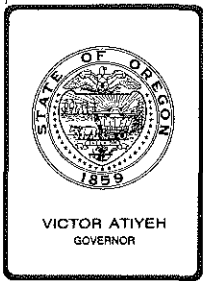
Date:	7/30/83	Event:	Team Points
Paid Attendance:	190 =	\$	1,008
Entry Fees	71 =		1,130
Other Income (approx)			125
Race Day Expenses (approx)			1,818
Race Day Net (approx)			445

Date:	8/13/83	Event:	Team Points & Corvette Weekend
Paid Attendance	343 =	\$	1,906
Entry Fees	60 =		1,050
Other Income (approx)			300
Race Day Expenses (approx)			1,765
Race Day Net (approx)			1,497

Date:	9/3&4/83	Event:	Budweiser 16 Funny Cars
Paid Attendance	3,092 =	\$	23,497
Entry Fees	73 =		2,190
Other Income (approx)			2,500
Race Day Expenses (approx)			17,000
Race Day Net (approx)			11,000

Date	9/18/83	Event:	Track Points
Paid Attendance:	130 =	\$	668
Entry Fees	66 =		1,095
Other Income (approx)			125
Race Day Expenses (approx)			1,917
Race Day Net (approx)			(29)

The above figures do not show all of our expenses of operation. It would be very difficult to charge each event with other costs such as cleaning supplies, annual salaries, yearly printing and postage expense, brooms, rice hull ash, trophies, travel expenses, telephone, power, water, traction compound, etc.



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: Acting Director

Subject: Agenda Item No. K , November 18, 1983, EQC Meeting

RELATIONSHIPS WITH OTHER AGENCIES

BACKGROUND

At the April 8, 1983, Environmental Quality Commission meeting, the Commission denied a petition for a declaratory ruling filed by the Oregon Environmental Council. The Council was seeking a Commission ruling on the appropriateness of the Department's decision to exercise its permitting discretion in not issuing a water quality permit to oyster farmers in Tillamook Bay when applying a pesticide to eradicate mud and ghost shrimp. In denying the petition, the Commission instructed the staff to return with a detailed staff report which analyzed the Department's permit-type relationships with other state and federal agencies.

At the July 8, 1983, meeting, the Commission reviewed an initial listing of the types of relationships with other agencies in each division. The staff is now returning with a more detailed listing which describes which relationships are required by Oregon law; where memoranda of agreement exist; and what types of more informal practices are adhered to.

There are some areas where the Commission and Department could exercise greater permitting authority in the Water Quality and Solid Waste programs.

The Commission's and therefore the Department's authority in both the solid waste (ORS 459) and water quality (ORS 468) statutes is very broad. In solid waste, the Attorney General has advised the Commission and Department that all areas where materials are stored or collected for possible recycling or reuse could be licensed as a solid waste disposal site (42 OP ATTY GEN 132 (1981)). The Commission reviewed this opinion as part of a petition for Declaratory Ruling and agreed with the Department's present practices of limiting permits to areas accepting municipal, commercial, or industrial solid waste. The Department is now re-evaluating its practices with regard to transfer station-type activities.



Contains
Recycled
Materials

Likewise, the Water Quality statutes are quite broad. The definition of "pollution" in ORS 468.700(3) is so extensive ("...alteration of the physical, chemical, or biological properties of any waters of the state...") that any physical contact with the water, such as wading, could require a permit. The Department has traditionally restricted permits to those activities which damage water quality and where another state agency was not directly involved in overseeing the activity.

SUMMATION

The requested information about the types of permitting activities the Department coordinates with other state and federal agencies is attached.

RECOMMENDATION

This is an informational report. No Commission action is required. The Commission should accept the report and direct the staff to change any permit related activities as they wish.



Michael J. Downs

Attachments
Janet A. Gillaspie:j
229-6271
October 27, 1983
FW606

Attachment 1

DEQ RELATIONSHIPS WITH OTHER AGENCIES

BY KIND OF ACTIVITY/AFFECTED DEQ DIVISION

A I R Q U A L I T Y

AGENCY/ACTIVITY	PROCEDURE	AUTHORITY/ EVALUATION/COMMENTS
<p><u>OREGON DEPARTMENT OF ENERGY and ENERGY FACILITIES SITING COUNCIL</u></p> <p>New energy facilities with greater than 50 MW capacity (including coal-fired power plant and co-generation facilities).</p>	<p>New energy facilities must apply for and obtain siting certificate from the Siting Council prior to construction or operation. Certificate prescribes conditions of operation.</p> <p>DEQ develops air quality related conditions which are set-forth in air contaminant discharge permit. These conditions must be compatible with and are incorporated into the Site Certificate.</p>	<p>State Law</p> <p>These activities are coordinated through a memo of understanding between the DEQ and DOE/Siting Council. The process generally works well. Problems have developed when it was necessary to alter the air permit conditions and the entire Site Certificate had to be re-opened for modification.</p>
<p><u>OREGON HEALTH DIVISION RADIATION CONTROL</u></p> <p>Airborne radioactivity.</p>	<p>The State Health Division (HD) is authorized to establish Statewide programs, rules and regulations, which are compatible with Federal programs, to protect people and property from radioactive hazards.</p> <p>DEQ is authorized to set standards and control emissions of air pollutants to attain and maintain good air quality.</p>	<p>State Law</p> <p>State Law</p>

A I R Q U A L I T Y

AGENCY/ACTIVITY	PROCEDURE	AUTHORITY/ EVALUATION/COMMENTS
	<p>DEQ has received delegation from the Federal EPA to administer the National Environmental Standards for Hazardous Air Pollutants (NESHAPs) program and EPA is presently proposing to adopt standards for control of radioactive emissions into the ambient air.</p>	<p>The DEQ and HD have held meetings and anticipate development of a memo of understanding such that the responsibilities of both agencies will be carried out in regulating radioactive emissions.</p>
<p><u>FEDERAL LAND MANAGERS INCLUDING:</u> <u>BUREAU OF LAND MANAGEMENT,</u> <u>U.S. FOREST SERVICE, and</u> <u>NATIONAL PARK SERVICE.</u></p>		
<p>Visibility impairment or other AQ related values in Class I Prevention of Significant Deterioration (PSD) areas.</p>	<p>DEQ notifies appropriate land manager of any proposed project that may affect a Class I area and negotiates appropriate protective conditions to be incorporated in the air permit prior to issuance.</p>	<p>DEQ rules which have been approved by EPA prior to delegating the PSD program to DEQ. No such projects processed yet.</p>
<p><u>STATE FIRE MARSHALL and</u> <u>LOCAL FIRE DISTRICTS</u></p>		
<p>Field Burning</p>	<p>Field burning. Growers register through local fire districts. Quotas are released through fire districts via radio.</p>	<p>State Law & DEQ regulations. System is working well and has worked well over the years.</p>

A I R Q U A L I T Y

AGENCY/ACTIVITY	PROCEDURE	AUTHORITY/ EVALUATION/COMMENTS
Backyard Burning	Backyard burning. DEQ decision to burn/no burn released to districts via Fire Marshal teletype. Districts may veto burning authorization for fire safety reasons.	Confusions occurs when districts do not allow burning for safety reasons, but otherwise works reasonably well.
<u>WORKER'S COMPENSATION</u>		
<u>DEPARTMENT</u>		
Regulation of Asbestos Exposure.	W.C. Department has jurisdiction over asbestos exposure in the work-place.	State Law & W.C.D. rules.
	DEQ has jurisdiction over the control of asbestos in the ambient air.	State Law & DEQ rules.
	Each Department notifies the other when a situation involving the handling, storage, transport, or disposal of asbestos is involved. The respective staffs coordinate & cooperate in assuring proper control of any identified asbestos hazard.	Recent coordination efforts should improve effectiveness of program.
<u>STATE DEPT. OF FORESTRY</u>		
Slash Smoke Management	State Department of Forestry (DOF) issues weather advisories and provides guidance to District Rangers regarding where and when slash can be burned. Program objective is to	State Law and statutorily prescribed Slash Smoke Management Plan. DEQ, by statute, must approve the Slash Smoke Management Plan.

A I R Q U A L I T Y

AGENCY/ACTIVITY

PROCEDURE

AUTHORITY/
EVALUATION/COMMENTS

keep slash smoke out of populated areas.

DEQ Field Burning staff coordinates daily with DOF staff during field burning season. DOF generally voluntarily curtails slash burning on field burning days.

The program works reasonably well. There are still some smoke intrusions caused by slash burning which the public ascribes to field burning. The slash smoke program could work better if actual burning control was centered in DOF headquarters and impacts were tracked better.

A I R Q U A L I T Y

NOISE PROGRAM

<u>AGENCY/ACTIVITY</u>	<u>PROCEDURE</u>	<u>AUTHORITY/ EVALUATION/COMMENTS</u>
<u>STATE MARINE BOARD</u>		
Motorboard Racing	DEQ reviews marine event applications and suggests modifications as necessary to meet noise rules.	Regulations. Works well.
<u>OREGON DEPARTMENT OF TRANSPORTATION AERONAUTICS DIVISION</u>		
New Airports	New airports must obtain permit from Aeronautics Division. DEQ noise rules must be met prior to permit issuance.	Regulations. Works well.
<u>OREGON DEPARTMENT OF ENERGY and ENERGY FACILITIES SITING COUNCIL</u>		
Energy Facility	Energy facilities greater than 50 MW must obtain site certificate. DEQ would suggest Noise conditions for inclusion in the site certificate.	State Law Memorandum of Understanding; working well.

SOLID WASTE DIVISION

AGENCY/ACTIVITY	PROCEDURE	EVALUATION/COMMENTS
<u>WATER RESOURCES</u>		
Siting new landfills	Water Resources acts in a consultant role in all matters relating to hydrogeology. Examples are placement of monitoring wells and general assessment of disposal sites. Consultation is in lieu of DEQ having staff capability in hydrogeology. DEQ takes Water Resources' comments and incorporates them into official correspondence and permits.	Works well. Consultation only.
<u>U.S. CORPS OF ENGINEERS</u> <u>DIVISION OF STATE LANDS</u>		
Fill permits	Both agencies issue permits to fill in wetlands. DEQ issues permits for solid waste disposal sites in wetland areas. Approval of the Corps or Division of State Lands is necessary prior to issuance of DEQ permit.	Corps 404 fill permit is extremely difficult to obtain for solid waste disposal. Federal permit is required.

S O L I D W A S T E D I V I S I O N

AGENCY/ACTIVITY	PROCEDURE	EVALUATION/COMMENTS
<u>DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRY</u>		
Mined Land Reclamation Act	<p>DOGAMI issues permits for mining. A requirement of the application is submission of a reclamation plan.</p> <p>DEQ must be prepared to issue a solid waste permit if landfilling of solid waste is the method of reclamation. If DEQ will not issue a permit, an alternate reclamation plan is required by DOGAMI.</p>	Normal procedure is contact prior to land use hearings at the local level by DOGAMI. DEQ permit required.
<u>ENERGY FACILITIES SITING COUNCIL</u>		
New energy facilities with greater than 50 Mw capacity	<p>New energy facilities must apply for and obtain a siting certificate from the siting council prior to construction or operation. Certificate prescribes conditions of operation.</p> <p>DEQ comments on applicant's proposal relating to disposal of solid waste (especially ash from coal-fired facilities).</p>	Memorandum of Understanding; has worked well.
<u>DEPARTMENT OF AGRICULTURE</u>		
Regulation of pesticides	<p>Agriculture registers pesticides and commercial applicators.</p> <p>DEQ regulates waste pesticides and empty containers.</p>	Cooperation makes system work well. DEQ recently involved state agencies including Agriculture on an advisory committee to revise and upgrade waste pesticide and empty container rules. No permits involved.

SOLID WASTE DIVISION

AGENCY/ACTIVITY	PROCEDURE	EVALUATION/COMMENTS
<u>PUBLIC UTILITY COMMISSIONER'S OFFICE</u>		
Regulation of hazardous waste transportation	PUC has exclusive jurisdiction over most transportation-related activities. DEQ would regulate air and water transportation.	Memorandum of Understanding; works well.
<u>WORKERS' COMPENSATION DIVISION</u>		
Workers' safety from hazardous materials	Accident Prevention routinely conducts compliance inspections of regulated business. DEQ inspectors share noted violations with Accident Prevention.	Cooperation makes system work well.

WATER QUALITY

AGENCY/ACTIVITY	PROCEDURE	AUTHORITY EVALUATION/COMMENTS
<u>DIVISION OF STATE LANDS (DSL)</u>		
Permit for fill and removal in state waterways	DSL receives applications, routes to agencies for comment; DSL takes agency comments into account when it issues a permit.	State Law. Procedure has been in effect for 15 years and seems to work well.
	DEQ accepts DSL permit in lieu of issuing state waste discharge permit for the same activity.	Informal
<u>STATE FORESTRY DEPARTMENT (DOF)</u>		
Forest Practices	DOF adopts rules governing forest practices. The rules must assure that EQC water quality standards are met. DEQ advises and comments on DOF rules during adoption process. DEQ can enforce if DOF actions are inadequate	State Law. Intent is that DOF be the single state agency regulating activities on forest lands.
	DEQ reviews and approves overall program and designates DOF as the official management agency.	Pursuant to Federal Clean Water Act, and Memorandum of Agreement between DEQ and DOF.
	DEQ participates with other agencies in annual review of Forest Practices Act program.	Required by state law.

WATER QUALITY
(Cont.)

AGENCY/ACTIVITY	PROCEDURE	AUTHORITY EVALUATION/COMMENTS
<u>STATE DEPARTMENT OF AGRICULTURE</u> (DOA)		
Licenses pesticide applicators. Operates State Pesticide Clearing House.	Registers pesticides and herbicides for use in Oregon, based on EPA registering and labeling.	State Law. Chemicals are all approved by EPA. Application in compliance with the label is presumed to be environmentally acceptable.
	Trains and licenses applicators for restricted products.	
	Issues notice of proposed pesticide applications by public agencies.	Cleanup of equipment by applicators and spills are the main problem related to pesticide application. The Depart- ment reviews plans and issues permits for applicator cleanup and disposal facilities.
	DEQ reviews and comments on notices and recommends restrictions, and monitoring as appropriate.	
Plans for and seeks to implement soil and water conservation practices on private agricultural lands.	DOA Soil and Water Conservation Division works with local districts to develop conservation plans with voluntary cooperation of landowners.	Pursuant to state statute.
	DOA, with assistance from local districts, the Federal Soil Conservation Service, the OSU Extension Service, and the Agricultural Stabilization and Conservation Service develops and adopts agricultural best management practices.	Memorandum of Agreement between DEQ and DOA.

WATER QUALITY
(Cont.)

AGENCY/ACTIVITY	PROCEDURE	AUTHORITY EVALUATION/COMMENTS
	DEQ approves adopted Best Management Practices, designates DOA as the management agency pursuant to the Federal Clean Water Act. DEQ recertifies designation and Best Management Practices on an annual basis.	Memorandum of Agreement between DEQ and DOA.
	DOA submits annual evaluation report to DEQ. DEQ informally reviews progress in implementing BMP's.	Memorandum of Agreement between DEQ and DOA.
<u>WATER RESOURCES DEPARTMENT (WRD)</u>		
Reinjection of hot water (less than 250° F) used heating and other geothermal activities.	Rather than issuing a disposal permit for reinjection of this hot water, DEQ relies upon WRD to assess its impact on groundwater and authorize the reinjection if it goes to the same aquifer or one of equivalent quality.	Informal agreement. Should be formalized in Memorandum of Agreement.
	WRD issues permits for groundwater recharge.	
	The DEQ will review any groundwater recharge proposals for quality concerns but does not plan to get into a duplicate permitting process. This activity is a very infrequent occurrence.	Informal agreement. Should be formalized in Memorandum of Agreement.

WATER QUALITY
(Cont.)

AGENCY/ACTIVITY	PROCEDURE	AUTHORITY EVALUATION/COMMENTS
<u>FISH & WILDLIFE DEPARTMENT (ODFW)</u>		
Addition of chemicals to water.	Fish & Wildlife Commission issues permits for use of chemicals in water which are intended to impact aquatic life. DEQ accepts F&W permit in lieu of a DEQ permit.	State Law. Informal.
<u>DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES (DOGAMI)</u>		
Drilling for geothermal energy, oil and gas.	DOGAMI issues permits for drilling. DOGAMI incorporates DEQ proposed conditions in permits. DEQ accepts DOGAMI permit in lieu of DEQ waste discharge permit for same activities. DEQ accepts DOGAMI review of plans for drilling mud disposal facilities at the drilling site to minimize multiple agency involvement. DEQ reviews and approves plans for disposal of mud off the drilling site.	State Law. Letter of Understanding. This process has worked quite well. Pursuant to Letter of Understanding. There have been some problems in the early stages but these are being resolved by better review criteria. DOGAMI informs the driller of the necessity to get DEQ approval for off-site disposal.
Surface mining permits, land reclamation plans. plans.	DOGAMI issues permits and approves plans. DOGAMI incorporates DEQ concerns in permits.	State Law. Program has worked well. Joint inspections by DEQ and DOGAMI are scheduled where activities may impact water quality. If activity includes a continuing discharge of water, DEQ issues a waste discharge permit.

WATER QUALITY
(Cont.)

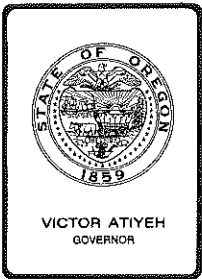
AGENCY/ACTIVITY	PROCEDURE	AUTHORITY EVALUATION/COMMENTS
Underground injection of waste.	DEQ is pursuing delegation of federal underground injection control program. Activities relating to geothermal, oil and gas exploration and development will require DOGAMI cooperation. DEQ would prefer to have DOGAMI issue permits for underground injection activities related to oil and gas recovery.	Memorandum of Agreement is being developed between DEQ and DOGAMI.
<u>DEPARTMENT OF ENERGY</u>		
Issues site certificates for energy facilities over a minimum size including hydro and thermal.	ODOE has primary jurisdiction over energy associated facilities over a certain minimum size. ODOE carries out an intensive evaluation of proposed facility before issuing a site certificate, including site evaluation and assessment of environmental impacts.	State law.
	DEQ coordinates with ODOE on-site evaluations and issues NPDES permits, if needed.	Memorandum of Agreement. See also section on Federal Energy Regulatory Commission (FERC).
<u>U.S. ARMY CORPS OF ENGINEERS (COE)</u>		
Permits for actions in and adjacent to navigable waterways pursuant to Section 404 of the Clean Water Act and the 1899 Rivers and Harbors Act.	DEQ receives applications via DSL for review and comment and issuance of standards compliance certification pursuant to Section 401 of the Clean Water Act. DSL forwards comments to COE for all agencies.	Federal Law. Applications come from 4 different COE districts, total 300-400 per year.
	DEQ relies on COE permits in lieu of duplicative DEQ permits	DEQ coordinates extensively with other state and federal agencies on project evaluations. Informal.

WATER QUALITY
(Cont.)

AGENCY/ACTIVITY	PROCEDURE	AUTHORITY EVALUATION/COMMENTS
<u>U. S. COAST GUARD (USCG)</u>		
Permits related to bridge construction in navigable waters.	USCG notifies DSL of applications and issues public notice of DEQ intent to issue 401 certification pursuant to the Clean Water Act.	Federal Law. Applications total 10-12 year. DSL acts as clearing house for state agency responses.
	DEQ relies on USCG permits in lieu of duplicative DEQ permits.	Informal.
<u>FEDERAL ENERGY REGULATORY COMMISSION (FERC)</u>		
Licenses for energy facilities including hydro and thermal.	FERC issues public notice of applications. DEQ issues notice of intent to issue 401 Certification or must waive the certification requirement.	Federal Law. Numerous applications received in last 2 years. Few result in actual facility construction.
	DEQ relies on FERC licenses in lieu of duplicative DEQ permits.	Informal.
<u>U. S. FOREST SERVICE (USFS)</u>		
Activities and practices on national forest lands and rangelands under their jurisdiction.	USFS incorporates practices equivalent to State Forest Practices Act rules in its management plans and timber contracts. USFS coordinates with State Department of Forestry.	Pursuant to Federal Clean Water Act.

WATER QUALITY
(Cont.)

AGENCY/ACTIVITY	PROCEDURE	AUTHORITY EVALUATION/COMMENTS
<u>BUREAU OF LAND MANAGEMENT</u> (BLM)	USFS implements DEQ-approved rangeland Best Management Practices.	Memorandum of Agreement between DEQ and USFS.
Activities and management practices on forest lands and rangelands under their jurisdiction.	DEQ reviews and accepts USFS program as part of the Statewide Water Quality Management Plan and has certified approval to EPA pursuant to the Clean Water Act. DEQ carries out annual recertifications.	USFS submits annual evaluation report to DEQ. Joint reviews in the field are conducted periodically.
	BLM incorporates best management practices equivalent to State Forest Practices Act rules in their management plans and timber contracts. BLM coordinates with the State Department of Forestry.	Pursuant to Federal Clean Water Act.
	BLM implements DEQ approved rangeland Best Management Practices.	Memorandum of Agreement between DEQ and BLM.
	DEQ reviews and accepts USFS program as part of the Statewide Water Quality Management Plan and has certified approval to EPA pursuant to the Clean Water Act. DEQ carries out annual recertifications.	BLM submits annual evaluation report to DEQ. Joint field reviews are periodically conducted.



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: Acting Director

Subject: Agenda Item No. L, November 18, 1983, EQC Meeting
Informational Report - Portland Area Backyard Burning

Background

At the August, 1982 EQC meeting, a status report was presented on Portland area backyard burning (Attachment 1). This report documented:

1. The EQC's efforts over the past several years to ban backyard burning.
2. That backyard burning was still causing citizen complaints and contributing to air quality standards violations.
3. That Metro had been successful in efforts to develop yard debris recyclers who have capacities to handle all the area's yard debris and to demonstrate several different yard debris collection systems.

The report indicated that under current legislation the EQC could ban backyard burning if needed to meet air quality standards and if reasonably available alternatives are available to a substantial majority of the people of the area. Based on the recommendation of the Director, no action was taken on the issue at the August 1982 meeting and the Department was directed to fully evaluate Metro's yard debris recycling report when completed and acted upon by the Metro Council. The Department was to then bring back recommendations to the EQC on what action they should take with respect to backyard burning.

Metro completed its yard debris recycling demonstration project report in March 1983 and held a public information hearing in August 1983 on its findings. Testimony at the hearings indicated yard debris recyclers needed to get a more steady and larger flow of material into their system in order to keep their operations economically viable. They supported

development of a curbside collection system. One recycler of yard debris indicated he had recently gone out of business because of low flows of waste. Local governments generally testified before Metro that they could not afford to provide separate yard debris collection systems and they were reluctant to impose any additional costs for pickup on homeowners. There were also citizens who testified for and against a ban on backyard burning.

It was believed that the Metro Council would approve the yard debris demonstration report and possibly establish a permanent recycling program at its October 27, 1983 meeting. Metro Council action on the report has been postponed and it now appears likely Metro will opt for a plan to attempt to further develop markets for yard debris. Metro has expressed concern that yard debris recyclers are stockpiling material. Metro would ultimately like to see a stronger market for yard debris products so that yard debris might be clearly classified as economically recyclable under Senate Bill 405. This would clearly allow separate curbside pickup to be mandated. It is questionable, though, whether recycling of yard debris will meet the economic feasibility requirements of SB 405.

Some other items of interest with respect to Portland area backyard burning have developed over the last year.

Portland City Club Report

In June of 1983, the Portland City Club completed a comprehensive study of the air pollution control policies in the Portland airshed. One of the recommendations made in the report was to urge the EQC to immediately move to ban open burning of yard debris with allowance of a reasonable time (one year) to allow programs for curbside collection to be implemented.

Air Quality Impacts

An assessment of air quality impacts from backyard burning over the past several years was made in the August 1982 report to the Commission. This report indicated that on several days backyard burning is likely a significant contributor to violations of particulate air quality standards.

During the first three weeks of the fall 1983 burning season, there were three weekend days in which significant areawide visibility loss was attributed to backyard burning. Through pattern recognition of nephelometer data on these days, it was estimated that backyard burning reduced areawide visibility up to 75% from about 30 miles visual range to about 6 miles during most daylight hours. Two of these days were not on the scheduled once-every-sixth-day sampling schedule for total suspended

particulate (TSP) so it is not known whether violation of standards occurred. The third day was on a sampling day and data indicates elevated TSP levels but no violations.

Public Opinion Survey

In order to get an idea of the public's attitude towards backyard burning, a public opinion survey was conducted by DEQ. The Department specifically wanted to determine the attitudes toward a burn ban or continuation of the present burn seasons, or establishment of a burning permit fee system which might be used as an incentive to increase recycling as well as being used as a means of increasing enforcement and education of current burning practices.

A random telephone survey was conducted during mid October, 1983 of over 200 Portland area residences. This survey was designed to be within $\pm 5-7\%$ accuracy. Results indicated, as in previous surveys, that about 35% of the households burn yard debris. The surprising results were that 63% of the households favored continuation of the present spring/fall burn, only 15% favored a ban, and 12% favored a fee system. About 11% had no opinion.

From some respondent comment, it appeared that there was a general reluctance to impose any additional cost to home owners to dispose of yard debris even among those who don't burn.

State Implementation Plan (SIP)

Portland area backyard burning rules were submitted to EPA as part of the Oregon SIP in 1972. These rules contained a ban to become effective January 1, 1975. Subsequent rules adopted by the EQC in 1976 and 1979, which had ban date extensions, were adopted as SIP revisions but never approved by EPA. The latest 1981 rules which extend backyard burning indefinitely were not adopted as a SIP revision.

Several items in the SIP, in addition to backyard burning rules, have been in need of updating to current status and the Department has embarked on developing an up-to-date consolidated SIP. The Department has proposed to drop Portland area backyard burning rules from the SIP on the basis that this would give the EQC more flexibility in dealing with localized problems. EPA, the League of Women Voters, and the Oregon Environmental Council have objected to this action. If backyard burning rules are to remain a part of the SIP, the Department believes that current rules should be incorporated. This could be addressed at the same time the entire consolidated SIP is officially adopted by the EQC.

Alternatives

There are three major alternatives the EQC could pursue with respect to backyard burning. These are:

1. Proceed toward a ban with provisions for a hardship burn permit.
2. Proceed to establish a burning permit fee system which would place a cost on households who use the air shed to dispose of their backyard wastes. This would provide some economic incentive to increase recycling as well as provide some revenue to provide a more effective enforcement and education program for those who burn.
3. Maintain the current spring/fall burning program.

Without significant support from local governments and citizens, the Department believes it would be a very difficult task to establish a burn ban. Likely some individuals would challenge whether the statutory requirements placed on the Commission have been met even though a case can be made that they have been met. Local governments should be relied on to implement debris collection programs and most local governments clearly are not inclined to do this at this time.

A burning permit fee system would not involve the statutory restrictions placed on the Commission with respect to backyard burning and could increase recycling activities and reduce smoke problems from those that choose to burn. With little public support for such a program, implementation would likely also be very controversial and enforcement may not be practicable.

Summation

1. Backyard burning continues to be among the most controversial sources of air pollution in the Portland area.
2. Complaints from Portland area residents about neighborhood smoke and odors from backyard burning continue to be received and air quality impacts continue to be significant. On three days during the first three weekends of the fall 1983 burning season, backyard burning appears to have reduced areawide visibility from about 30 miles to 6 miles during a large part of the daylight hours.
3. The Oregon Environmental Council, League of Women Voters, and EPA have objected to DEQ's proposal to remove backyard burning rules from the State Implementation Plan (SIP) in order to give the EQC more flexibility to deal with the issue. Rules in the approved EPA SIP

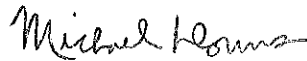
contain a ban which was to be effective January, 1975. Current backyard burning rules are not a part of the SIP.

4. The Portland City Club, in a major air quality study, has recommended that a ban be imposed.
5. As a result of the Metro yard debris recycling demonstration project, four sites have been strategically established in the Portland area within a 20 minute drive for most residents to accept all yard debris generated in the Metro area for recycling. One independent recycler has gone out of business for, among other reasons, insufficient volume of material being collected.
6. Metro has delayed their scheduled adoption of a permanent yard debris recycling program. It appears Metro will turn its efforts towards improving the marketing of yard debris with the hope of the EQC ultimately declaring it a recyclable material under SB 405. This would result in a mandate to provide separate curb side collection. There undoubtedly, though, will be those who will challenge whether yard debris can be recycled economically as required under SB 405 and, in actuality, recycling profits may not pay for a curbside collection system.
7. Local garbage collectors are reluctant to invest in and provide scheduled segregated yard debris curbside pickup unless an assurance exists that residences will participate in the program.
8. Local governments testified at a recent Metro yard debris information meeting that they are generally unwilling to provide any money to collect yard debris and that they are also reluctant to impose any new collection costs on their constituencies.
9. A recent DEQ public opinion survey indicates about 35% of the households in the Portland area burn yard debris, yet 63% of the households favor maintaining the present spring/fall burn period. Fourteen percent (14%) favor a ban and only 11% favor a burning permit fee system.
10. While a case can be made that alternatives to backyard burning are reasonably available to a substantial majority of the people in the area and elimination of burning would improve area visibility and aesthetic conditions and aid in meeting air quality standards, there are those who would challenge whether or not these conditions have been met which would allow the EQC to ban burning under legislative provisions. Clearly, a large majority of local governments and citizens in the Portland area do not support a ban or a permit fee

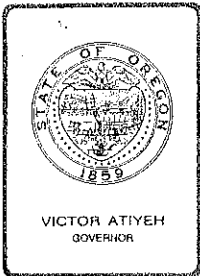
system to reduce air quality impacts from backyard burning nor do they support contribution of any money to provide separate curbside collections.

Acting Director's Recommendations

Lacking substantial support from local government and citizens of the Portland area for either a burn ban, a monetary commitment to cover segregated curbside pickup, or a burning fee system to improve recycling and existing burning practices, the Acting Director recommends that the EQC maintain the current spring/fall burning period and further that the staff continue to work with Metro and other interested parties to investigate the feasibility of a program to classify yard debris in the Portland area as a recyclable material under SB 405. The Department should also propose incorporation of present backyard burning rules in the SIP as part of the total SIP overhaul expected in the first quarter of 1984.


Michael J. Downs

J.F. KOWALCZYK:ahe
229-6459
October 24, 1983
AZ408



Environmental Quality Commission

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MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. J, August 27, 1982, EQC Meeting

Status Report - Portland Area Backyard Burning

Background

Implementation of a ban on backyard burning in the Portland area has been postponed several times since first considered by the EQC in the early 1970's. At the December 19, 1980 meeting, the EQC voted unanimously to implement rules which called for a ban after December 31, 1980. The Commission also directed the Department to develop further rule modifications which could alleviate hardship burning problems and address possible ban boundary inequities. At the January 30, 1981 meeting, the EQC adopted temporary backyard burning rules which reduced burn ban boundaries to the highly populated metropolitan area and established a hardship burning permit program with an associated \$30 fee.

Substantial public and political opposition to the ban developed in early 1981 highlighted by introduction of a bill in the '81 Oregon Legislature which would have permanently prohibited the EQC from banning backyard burning. In consideration of this opposition and potential legislation, the EQC on March 13, 1981 revised the January 30, 1981 temporary rule to allow backyard burning in the Portland Metro area based on a finding that the EQC had overestimated the ability of local government to provide alternative disposal cleanup methods and that debris posed a fire and pest hazard.

The '81 Oregon Legislature subsequently adopted SB327 which prevented the EQC from imposing a ban on backyard burning before June 30, 1982 but allowed imposition of a ban after that date if the EQC finds that:

- 1) Such prohibiting is necessary in the area to meet air quality standards; and
- 2) Alternative disposal methods are reasonably available to a substantial majority of the population in the affected area.

At the August 28, 1981 meeting, the EQC adopted permanent backyard burning rules which allow backyard burning in the Spring and Fall on days with good smoke dispersion characteristics. These rules have no end date for such burning in the Portland area.

Evaluation

Current state statutes now allow the EQC to consider banning backyard burning provided certain conditions are met. The next burn season is scheduled to start October 1. It is thus timely to consider the status of backyard burning in the Portland area, including the development of alternative disposal systems.

Recent Smoke Management Activities

During the three burn seasons that have occurred since the 1980 burn ban was rescinded, the meteorological regulation of burn days has been handled about the same as previous years. Some efforts were made to make the program more objective but it was decided that retaining some professional judgement in making burning decisions results in a more effective program.

Complaints against smoke from backyard burning continue to be received with 36 recorded for the Spring '82 period. In addition Northwest Region records during this period indicate 47 individuals expressed opposition to burning and 10 expressed favor of continued burning. With budget cuts the enforcement program for Portland area residential backyard burning has been substantially reduced. Most complaints are not followed up with a field visit and only 11 notices of violations were issued and no civil penalties were assessed in the Spring '82 period. There is some indication that the compliance with burning regulations may be degrading or will degrade with increased burning of wet/green wood, burning outside of daily specified burn time periods, burning of trash other than woody, leafy material and burning on prohibited days.

Most complaints have been associated with burning during the early part of the burn period when burning appears to be the greatest.

Air Quality Impacts

Assessing the air quality impact from backyard burning has always been a difficult task because of the small-sized light-weight particulate emitted from such practices, the lack of adequate monitoring in residential areas where the majority of burning occurs and the chemical similarity of backyard burning smoke to wood heating smoke which renders the state-of-the-art chemical mass balance techniques almost useless to distinguish between the two sources.

Despite all the limitations in identifying backyard burning impacts, some success has been achieved in identifying impacts thru nephelometer pattern recognition techniques, trend analysis and modeling. The Department's January 30, 1981 report to the EQC on backyard debris alternative disposal methods identified maximum measured impacts from backyard burning in downtown Portland of 15 ug/m³-24 hour average and modeled maximum concentrations in residential areas of about 40 ug/m³. Average modeled burn-day daily impacts in residential areas approached 7 ug/m³.

Considering EPA's daily particulate significant impact criteria of 5 ug/m³ and the national air quality standard of 150 ug/m³, backyard burning impacts would have to be characterized as significant contributors to particulate levels in the Portland area.

An interesting analysis has recently been made of the number of particulate ambient air violations occurring during the burning season and the number of violation days coinciding with actual burn days. This data is shown in the table below.

Table 1

Days Exceeding 150 ug/m³ TSP Standard

(1976 through April 1982)

Site	Total Days >150 ug/m ³	Days >150 ug/m ³ During Burn Season	Days >150 ug/m ³ With Open Burning	Days >150 ug/m ³ % With Open Burning During Burn Season
Central Fire	39	20	4	20
Pacific Motor Trucking	36	13	7	54
SE 58th/Lafayette	2	1	1	100
SE 122nd/Glisan	7	5	2	40
Milwaukie H.S.	6	4	1	25
Lake Oswego	24	10	5	50
Oregon City	6	2	1	50
Beaverton	<u>12</u>	<u>8</u>	<u>2</u>	25
Total	132	63	23	

This data indicates that about 50% of the TSP violation days that occurred in the period 1976 through April 1982 occurred during the burning season and of those occurring during the burning season about 1/3 occurred on days with allowed open burning. Violations from volcanic ash have been excluded from this table.

Another interesting observation is the generally higher percentage of violation days occurring on burn days during the burn season in residential areas compared to the downtown Portland commercial area site (Central Fire). This would tend to indicate backyard burning is likely a significant cause of air quality standard violations in these areas.

Additional nephelometer pattern recognition analysis since that included in the January 30, 1981 report to the EQC has confirmed similar measured impacts at least in the range of 15 ug/m³ -24 hour average. October 11, 1980 and March 6, 1982 are noteworthy days, with March 6, 1982 having an extraordinarily high early evening smoke peak. This peak is suspected to be caused in substantial part to backyard fire burnout smoke being trapped under a rapidly forming intense nighttime radiation inversion. Wood heat load was considered low to moderate that day with a high temperature of 58° F that day and temperature still at 52° F at 7 p.m.

Development of Alternative Disposal Methods

In January of 1981 the Metropolitan Service District applied for and received a \$265,000 grant from the EPA for a yard debris demonstration program. Generally, the objectives of the grant were to demonstrate viable processing techniques for the conversion of yard debris into a marketable product and show that a system to collect and process yard debris is either generally available or ready for implementation in the affected areas.

Metro is now in the process of completing its final evaluation of the program. Their report should be complete and available for release by the first of September. Metro's commitment to an on-going yard debris program cannot be defined until the final report has been completed and their council acts on its recommendations which is also scheduled to occur sometime in September. However, several milestones have been reached and can be discussed now.

Specifically, the program addressed three elements; collection, processing/marketing, and education/promotion. Each element has been tested and an information base developed for the Portland area. From this experience an on-going method to deal with yard debris is evolving thru the private sector.

Since the program was initiated, a number of collection activities have occurred to further demonstrate methods to collect and recover yard debris from the homeowner. These activities included:

- Ten neighborhood cleanup projects which were conducted within the City of Portland where yard debris was segregated into drop boxes and then transported to a processing site.
- An adjusted garbage collection franchise ordinance in Clackamas County to address collection of segregated yard debris in the county's unincorporated areas - implementation is pending.

- Projects by several local jurisdictions to demonstrate an ability to collect yard debris such as Beaverton with an on-going Spring central collection site; Oregon City which has on-going Public Works Department house-by-house collection of yard debris; and Gladstone with an on-going franchise collection service. Lake Oswego also tested a franchise collection services while West Linn and Troutdale tested a central collection site.

All the efforts for collection demonstrated an ability to collect yard debris but also discovered a lack of sufficient incentives for the public to significantly participate since the backyard burning ban was lifted shortly before the first demonstration activities were initiated. Without adequate incentive (such as a burn ban) for the public to participate in a curbside collection program, garbage collectors are reluctant to initiate a segregated yard debris collection service. Their ability to recover capital investment is questionable unless they know the option of backyard burning is either shut off or very restrictive.

Two on-going central collection/processing sites (yard debris recycling centers) aided by Metro grant money have been established, each charging \$1/cu. yd. tipping fee. They are located at McFarlane's Bark, Inc. in Clackamas with a capacity of 68,000 cu. yds./yr. for yard debris and another in north Portland at Waste Bi-Products with a capacity of at least 50,000 cu. yds./yr. for demolition and yard debris. Although these companies are competitors for yard debris material, both appear successful in their marketing of processed yard debris as either hog fuel or mulch. Grimm's Fuel of Lake Oswego would also like to begin to recycle yard debris as a mulch. They hope to be set up to do so by mid-August with a capacity to receive up to 150,000 cu. yds./yr. of demolition and yard debris.

With the two established sites, Grimm's proposed site, and two additional sites proposed by Waste Bi-Products, the metro area could well have a total of five central collection and processing sites within a six month period. Their combined total capacity for dealing with certain demolition and yard debris material would be nearly 400,000 cu. yds./yr., well above what is considered necessary to keep all presently burned yard debris from going to landfills. The DEQ Yard Debris Survey noted only 80,000-100,000 cu. yds. are now being burned by the homeowner. In essence, private industry has demonstrated and established a system to "recycle" yard debris which will keep the material out of the region's landfills. A secondary benefit is that certain demolition material and yard debris presently going to landfills will also be processed for market instead of filling up valuable landfill space. Yard debris presently going to landfills is estimated at about 900,000 yds/yr. Systems similar to the one being developed in Portland are also being developed in other parts of the nation.

The mulch and hog fuel business has been dependent on wood waste from wood products industry as a resource material. However, with mill closures and the advent of new wood products made from wood waste, industry has had to

look elsewhere for material to sustain the mulch and hog fuel markets. These conditions of short supply and high demand have drawn the private sector into developing alternatives for yard disposal. Sustaining this current private sector interest in utilizing yard debris will be heavily dependent though on some incentive being provided for citizens to utilize these services.

The Metro Yard Debris Steering Committee, made up of local jurisdictions, met on June 15, 1982 and addressed the issue of whether alternative disposal methods are reasonably available to a substantial majority of the population in the metro area which is a requirement of SB 327. The Committee responded, "We are moving toward that goal and should reach it within six months."

As part of the proposed Metro garbage burner air permit a condition has been incorporated requiring Metro to provide an emission offset program to reduce backyard burning in the metropolitan Clackamas County area. A major element of this program would be to permanently subsidize collection of yard debris. Local governments in the affected area of Clackamas County have indicated a willingness to participate in such a program. Metro is committed also to seek legislation which could result in a more equitable fee system for yard debris collection. If no other future program for reducing backyard burning in the region is required by the EQC, the Metro offset program could still provide some reductions of backyard burning in the metropolitan portion of Clackamas County thru an incentive approach.

Alternative EQC Actions

It does not appear justified for the EQC to take any new action on the Portland area backyard burning issue until the final Metro report on alternative disposal methods is completed, acted upon by the Metro Council and reviewed by DEQ and documentation on the need to meet air quality standards is completed. There are at least 10 alternative actions the EQC might ultimately direct the Department to take in dealing with this issue. These actions are listed below.

Alternatives to Deal With Portland Backyard Burning

1. Extend present two season burn period to year round.
2. Maintain status quo at two season burns.
3. Conduct educational program to teach how to burn cleaner.
4. Promote voluntary reduction in burning.
5. Improve burn call forecasting accuracy.
6. Encourage local jurisdictions to ban backyard burning for use as offset to attract industry.
7. *Issue burn permits on seasonal burn period basis for fee.
8. *Issue burn permits for year round burning for fee.
9. Ban burning with hardship permit allowance.
10. Ban burning with no exceptions.

*These options could provide sufficient funds to accomplish 3, 4, and 5 and also provide an incentive to use alternative disposal methods.

Recognizing that backyard burning emissions should be reduced to the extent practicable in densely populated areas like Portland, alternatives 7, 8, 9 and 10 would appear to be the most effective to pursue. Alternatives 7 and 8 requiring burning permits with an associated fee would provide a means of greatly improving the smoke management program, especially enforcement aspects, while providing an incentive to use available alternative disposal methods which may be less costly than the permit. More Department and Fire District personnel would be needed to implement these programs which would have to be financed from the permit fees. Alternative 9, imposing a ban with a hardship permit allowance, would force use of currently available alternative disposal options and likely insure their continued availability as recently established private sector programs are counting on increased debris recycling in order to help sustain their new business. Work imposed on staff to administer the hardship permit would likely not be commensurate with fees charged. Fully identifying the costs and benefits of these options will take a few months to complete.

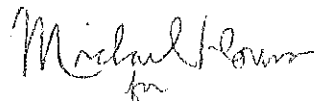
Summation

1. Backyard burning in the Portland area continues to cause complaints and contribute to particulate air quality standard violations.
2. There are some indications that non-compliance with burning rules and use of poor burning practices are increasing or will increase as DEQ enforcement actions regarding residential backyard burning in the Portland area has been substantially curtailed because of recent budget cuts.
3. Significant progress has been made by Metro and the private sector in developing yard debris utilization programs. Yard debris is now being converted to industrial fuel and soil amendments. Full evaluation of the availability of reasonably available alternative disposal methods can be made once Metro completes their yard debris demonstration project report later this summer.
4. Current legislation now allows the EQC to fully regulate and ban backyard burning if needed to meet air quality standards and reasonable available alternatives are available to a substantial majority.
5. The next scheduled burn season will begin October 1.
6. There are at least 10 alternative actions the EQC can take on the Portland area backyard burning issue but at least a few months of further study is needed before the Department will be in a position to make a recommendation on which course of action the EQC should take.

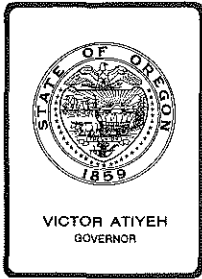
EQC Agenda Item No. J
August 27, 1982
Page 8

Director's Recommendation

It is recommended that the EQC take no action on the Portland backyard burning issue at this time. It is recommended that the EQC direct the Department to fully evaluate the Metro yard debris demonstration project report when it is completed and further evaluate the most promising alternative actions the EQC could take in the future. A recommendation should be presented to the EQC as soon as practicable on which alternative would appear to be the best choice to follow.


for
William H. Young

J.F. Kowalczyk:a
229-6459
July 29, 1982
AA2374 (1)



Environmental Quality Commission

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

MEMORANDUM

To: Environmental Quality Commission
From: Acting Director
Subject: Agenda Item No. M, November 18, 1983, EQC Meeting

Informational Report on the Ozone Control Strategy and VOC Growth Cushion for the Portland-Vancouver AQMA (Oregon Portion).

BACKGROUND

The Portland-Vancouver Air Quality Maintenance Area (AQMA) is one of three areas in Oregon which have been designated as nonattainment for ozone. The ozone control strategy for the Portland-Vancouver AQMA was adopted by the Commission as a part of the State Implementation Plan (SIP) on July 16, 1982. This strategy was approved by the Environmental Protection Agency (EPA) on October 7, 1982.

The ozone strategy consists of previously committed control measures to reduce volatile organic compound (VOC) emissions from transportation and industrial sources. The Portland ozone analysis indicated that the ozone control strategy would be adequate to meet the ozone standard and provide a small VOC growth cushion by 1987. The ozone modeling projected that VOC emissions in 1987 would be 1700 kilograms per day (kg/day) lower than the VOC emission levels required to just meet the ozone standard.

Subsequent to the adoption of the Portland ozone strategy in July 1982, the Department has received requests for VOC emission increases which would exceed the available VOC growth cushion. As a result of these requests, the Department has updated the Portland ozone analysis and outlined alternatives for handling VOC emission increases.

ALTERNATIVES AND EVALUATION

Ozone is an odorless and potentially toxic gas associated with photochemical smog. It is formed by photochemical reactions in the atmosphere between oxides of nitrogen and volatile organic compounds (VOC) in the presence of direct sunlight and warm temperatures. Reducing VOC emissions is the accepted method of lowering ozone levels.

VOC Emission Trend

The base year for the Portland area VOC emission inventory is 1980. VOC emissions have decreased substantially since 1980 as outlined in Figure 1.

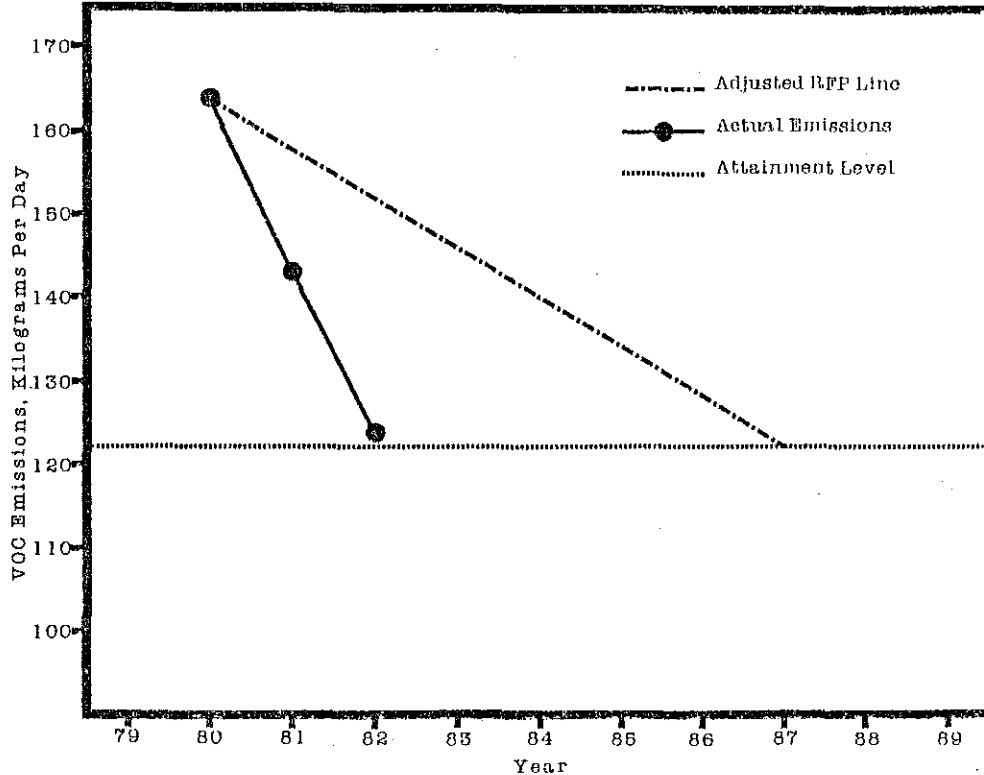


Figure 1. VOC Emission Trend in the Portland-Vancouver AQMA (Oregon Portion).

VOC emission inventories for stationary and mobile sources are summarized in Table 1. Highway VOC emissions in the Portland area have decreased substantially since 1980, primarily due to the Federal Motor Vehicle Emission Control Program (Federal tailpipe program) and the Portland motor vehicle inspection and maintenance (I/M) program. VOC emissions from petroleum marketing and storage sources decreased substantially during the 1980-1982 period due to the installation of: floating roofs, secondary roof seals, and vapor recovery systems on loading racks at gasoline terminals; vapor return systems on gasoline bulk plants; and Stage I controls on gasoline service stations. Some VOC emission decreases in other stationary source categories resulted from new control equipment but the major decreases were from reduced production due to the current economic recession.

Table 1. Portland-Vancouver AQMA (Oregon Portion) VOC Emission Inventories.

Source Category	Volatile Organic Compound Emissions (kg/day) ^a		
	1980	1981	1982
Stationary Sources	84,721	71,980	59,121
Mobile Sources	78,983	71,378	63,774
Total	163,704	143,358	122,895

a Average summer weekday.

The Portland ozone strategy adopted in July 1982 identified a growth cushion of 1700 kg/day, of which 85% (1445 kg/day) was allocated to Oregon and 15% (255 kg/day) to Washington. Of this growth cushion, a total of 1198 kg/day has been allocated by the Department for industrial expansion (786 kg/day to FMC Corporation) and transportation system revisions and updates (412 kg/day).

Two metal coating firms are currently operating under temporary variances from the VOC rules. A class variance for the metal coating industry is requested under a separate Agenda Item (No. G). These variances would allow VOC emissions to increase by a total of less than 400 tons per year (about 990 kg/day) until 1987. The temporary emissions increases associated with these variances are not expected to interfere with the demonstration of reasonable further progress (RFP) during the 1982-1987 period.

Ambient Ozone Trend

Ambient ozone levels in the Portland area have generally improved over the last seven years. The number of ozone standard exceedances has decreased from 17 in 1977 (actually an estimated 7 exceedances after adjustment for the calibration change) down to 2 exceedances per year in both 1982 and 1983. Five exceedances were recorded during an abnormal heat wave in August 1981. Ambient ozone levels in the Portland area are summarized in Table 2.

Table 2. Summary of Ambient Ozone Levels (Hourly Average) in the Portland Area From 1977 to 1983.

Year	2nd Highest Ozone Day (ug/m ³) ^a			No. of Days Over 235 ug/m ³		
	Sauvie	Carus	Milwaukie	Sauvie	Carus	Milwaukie
1977	208	443	302	0	15	2
1978	245	302	270	2	9	5
1979	310	216	216	1	1	0
1980	164	196	171	0	0	0
1981	213	421	208	0	5	0
1982	235	229	226	1	1	0
1983	97	182	244	0	0	2

a Pre-1979 ozone levels were measured with a different calibration method. The pre-1979 levels should be reduced by 20-25% for comparison with 1979 and later values.

Updated Analysis of the Ozone Strategy

The 1982 ozone strategy projected a small VOC growth cushion. Most of this growth cushion has been allocated as outlined in Table 3. The Department and the Metropolitan Service District (Metro) have updated the stationary and mobile source emission inventories. The Department used the updated emission inventory projections to reevaluate the ozone control strategy. The results of this reevaluation confirm that the ozone strategy is not adequate to accommodate future VOC emission needs.

Table 3. VOC Growth Cushion Allocation for the Portland-Vancouver AQMA.

Description	VOC Growth Cushion (kg/day)		Comments
	Oregon	Washington	
Base Cushion	1700		Before adjustments.
Washington Allocation	-255	+255	Allocated to Washington in July 1982.
Industrial Allocation	-786		Allocated to FMC in June 1983.
Transportation Allocation	-360	-52	Allocation for I-205 and transportation revisions.
Net Growth Cushion	299	203	

Local industries have requested VOC emission increases which are greater than the available growth cushion. For example, the growth cushion is not sufficient to accommodate a permanent rule relaxation for metal coating firms, which would require about 990 kilograms per day of VOC growth cushion. The Department has evaluated various alternatives for dealing with this problem.

Growth Cushion Alternatives

The Portland-Vancouver AQMA ozone strategy adopted by the Commission in 1982 indicated that Oregon would administer a new source review program utilizing the growth cushion concept. The Portland-Vancouver AQMA ozone strategy adopted by the State of Washington in 1982 indicated that Washington would operate in an offset mode, requiring VOC emission offsets by any new or expanded industry locating in the Washington portion of the AQMA. EPA subsequently approved the ozone control strategies submitted by both States and recognized the compatibility of the two approaches.

Since it now appears that the needed VOC increases exceed the available growth cushion, the Department has identified the following alternatives for dealing with this problem:

1. The Department could administer the new source review program using the growth cushion concept until the available growth cushion is used up, followed by an offset program.
2. The Commission could adopt additional VOC control measures for the Portland area, thus increasing the available growth cushion, and the Department could continue to administer the new source review program using the growth cushion concept for several years (depending on the magnitude of the VOC reduction from new control measures).

An offset program is viewed by some as a major impediment to growth and development. The Department has favored a growth cushion approach whenever possible in order to remove this impediment to growth and development without sacrificing air quality objectives. The continuation of the growth cushion approach in the Portland area in future years would require the adoption of additional control measures. The major potential VOC control measures for stationary sources which were identified in the 1982 ozone strategy are outlined in Table 4.

Table 4. Potential Future VOC Reductions From Stationary Sources in the Portland Area.

Source Category	VOC Emission Reduction (kg/day)
Service Station Unloading (Stage II)	4,440
Architectural Coating	6,200 ^a
Dry Cleaning (Stoddard)	380
More Stringent Gasoline Terminal Rule	870 ^b

a This control measure may be technology-forcing in Oregon's climate.

b This rule change would require more stringent controls on 2 of the 9 terminals in the Portland area; the other 7 terminals already provide more stringent controls.

In the 1982 ozone strategy, Metro identified several alternative control measures to reduce VOC emissions from mobile sources. The major potential mobile source control measures are outlined in Table 5.

Table 5. Potential Future VOC Control Measures For Mobile Sources in the Portland Area.

Control Measure	VOC Emission Reduction (kg/day)
Annual I/M Program	5,940
Freeway Ramp Metering	530
Expanded Public Transit	1,035
Additional Park and Ride Lots	80

If the Commission endorses the first alternative, (allocation of growth cushion followed by offset program), then no additional VOC control measures would be required. If the Commission endorses further consideration of the third alternative (new control measures and expanded growth cushion), then the Department would work with Metro and the Portland Air Quality Advisory Committee to identify the most feasible and cost-effective new control measures which could be implemented.

Any revision of the Portland ozone strategy, either to revise the VOC growth cushion or adopt new VOC control measures, would be coordinated with Metro and the State of Washington, presented for public hearing, and reviewed by EPA.

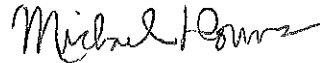
SUMMATION

1. The Portland-Vancouver AQMA is designated as a nonattainment area for ozone.
2. The Portland ozone control strategy was adopted by the Commission in July 1982 and approved by EPA in October 1982.
3. The 1982 ozone strategy was expected to result in attainment of the ozone standard by 1987, and result in a small VOC growth cushion (1700 kg/day) available for new growth and development.
4. The Department has reevaluated the Portland ozone strategy based on ambient ozone trends, VOC emission trends, and updated VOC emission projections. The results of this reevaluation confirm that the ozone strategy is not adequate to accommodate future VOC emission needs.
5. The Department has received industrial projections of need for VOC increases in future years (due to production increases, or rule relaxations) which cannot be accommodated at this time.
6. The Department has identified two alternatives for dealing with this problem:
 - a. The Department could administer the available growth cushion until it is used up, and then implement an offset program.
 - b. The Commission could adopt additional control measures to expand the available growth cushion, and the Department could continue to administer a new source review program using the growth cushion concept for several years (depending on the magnitude of the VOC reduction from new control measures).
8. The first alternative would require industries that need VOC emission increases to individually provide emission offsets; the second

alternative would require the Department to work with Metro and the Portland Air Quality Advisory Committee to identify the most feasible and cost-effective new VOC control measures which would be applied uniformly to existing VOC sources.

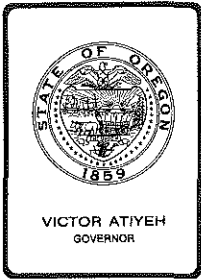
ACTING DIRECTOR'S RECOMMENDATION

The Acting Director recommends that the Commission direct the Department to work with Metro and the Portland Air Quality Advisory Commission to identify as expeditiously as possible the most feasible and cost-effective new VOC control measures which could be implemented to increase the VOC growth cushion in the Portland-Vancouver AQMA. A proposed revised ozone SIP would be brought back to the EQC for hearing authorization.



Michael J. Downs

AA3935
MERLYN HOUGH:a
229-6446
October 21, 1983



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MEMORANDUM

To: Environmental Quality Commission
From: Acting Director
Subject: Agenda Item No. N, November 18, 1983 EQC Meeting

Informational Report on the Compliance Status of Mt. Mazama
Plywood Company of Sutherlin.

Background

The Commission granted a further variance to Mt. Mazama Plywood Company on July 8, 1983. This variance required the Mt. Mazama Plywood Company to provide controls for each of its veneer dryers in accordance with the following schedule:

- a. By November 20, 1983, issue purchase orders for all major emission control equipment components.
- b. By December 1, 1983, begin construction and/or installation of the emission control equipment.
- c. By May 1, 1984, complete installation of emission control equipment and demonstrate compliance with both mass emission and visible standards.

In addition, Mt. Mazama Plywood Company was required to supply the Department with monthly financial data concerning the Chapter 11 bankruptcy proceedings which the parent corporation, Mazama Timber Products, Inc., has initiated.

Progress Report

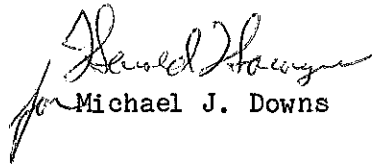
On July 26, 1983, the Bankruptcy Court granted the Corporation an extension until May 10, 1984 to file the Chapter 11 plan and until July 9, 1984 to gain acceptance of the plan.

Mt. Mazama Plywood Company submitted a letter to the Department on October 25, 1983 indicating that the Company would be unable to issue the purchase orders for the emission controls by November 20, 1983. The Company states that they are in no position to finance the veneer dryer controls. A copy of this letter is attached.

Department Action

Robert Haskins, Department of Justice, expects to complete a review of the details regarding the bankruptcy action within a few days. He also hopes to meet with the Company's attorney on this matter.

The Department will provide updated information regarding the Mt. Mazama Plywood Company variance at the November 18, 1983 EQC meeting. This update will include Mr. Haskins' findings, the Company's financial progress, and alternatives for possible further actions on this variance.


for Michael J. Downs

Attachments

1. Letter from Mt. Mazama Plywood Company

D. K. Neff:ahc
229-6480
October 27, 1983
AZ415

Mt. Mazama Plywood Co.

POST OFFICE BOX 738 • SUTHERLIN, OREGON 97479 • TELEPHONE 503/459-9555

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
OCT 27 1983
AIR QUALITY CONTROL

October 25, 1983

Lloyd Kostow, Manager
Program Operations
Air Quality Division
Department of Environmental Quality
Box 1760
Portland, Oregon 97207

Re: EQC Variance - Mt. Mazama Plywood Company - File 10-0022

Dear Mr. Kostow:

The November 20th. deadline to issue purchase orders is near and while some progress has been made in solving Mazama Timber Company's financial problems they are still operating under court protection. We are therefore in no position to finance construction of the dryer emission control equipment,

The court has extended the time of filing a reorganization plan to May 11, 1984. I might suggest that May or June would be an appropriate time to again review our variance.

Sincerely,



J.W. Kline
General Manager

JWK:mk

REC'D R. HASKINS
1 54 20



STATE OF OREGON
DEPARTMENT OF ENVIRONMENTAL QUALITY

Memorandum

To: Environmental Quality Commission

Date: November 15, 1983

From: Mike Downs *MD* Acting Director

Subject: McInnis Enterprises

As we indicated at the last Commission meeting, the Department filed a Notice of Intent to Revoke McInnis Enterprises' sewage disposal service license on October 13, 1983.

The company has appealed. The case has not yet been scheduled by the Hearings Officer.

JAG:jas

Item G

EQC
Downs
AQ

3103 NW Wilson St.
Portland, Or. 97210
Nov. 17, 1983

Environmental Quality Commission
522 S.W. 5th Ave.
Portland

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
R E C E I V E D
NOV 17 1983

Dear Commissioners:

OFFICE OF THE DIRECTOR

I understand that tomorrow you will be considering requests for variances from the Northwest Marine Iron Works and the Union Pacific Railroad, and that these would have the effect of exempting them from the new solvent emission rules through mid 1985. In considering those requests I hope that you will consider how close those companies are to residential areas and how serious air pollution problems are in those parts of the city which are exposed to strong local, as well as more general, pollution effects.

The Northwest Marine Iron Works is three blocks from my home, and your decision will have real effects on the quality of air in my neighborhood and the value of residential property there. I do not think that the solution is for all of us to move to the suburbs and add to the pollution by commuting. Eastern cities have given us too clear warnings of what happens when the core of the city is allowed to deteriorate.

Another point to consider is that exempting one company because it is so expensive to install pollution controls has a negative impact on those companies which have installed the controls. It is those socially responsible companies that I would not want to make noncompetitive in the marketplace.

I hope, then, that you will only grant the variances if three things are true:

First, I think that the variances should only be granted for a short time.

Second, I think that they should only be granted if the companies were held to their present levels of emissions during the extension period.

Finally, and probably most difficult to satisfy, I think that

the variances should only be granted if there is
real hope that the companies can meet the new standards
at the end of the extension period.

Thank you very much for considering these ideas. Please
enter this letter as testimony received relevant to the matter
of the two variances.

Sincerely,

A handwritten signature in cursive script that reads "David Wrench".

David Wrench

LENN L. HANNON
JACKSON COUNTY
DISTRICT 26

REPLY TO ADDRESS INDICATED:

- Senate Chamber
Salem, Oregon 97310
- 240 Scenic Drive
Ashland, Oregon 97520



OREGON STATE SENATE
SALEM, OREGON
97310

Item 5

COMMITTEES
Member:
Business and Consumer Affairs
Labor
Revenue

Assistant Minority Leader

November 17, 1983

Environmental Quality Commission
522 S.W. 5th Avenue
Portland, Oregon 97204

RE: Agenda item #5
November 18, 1983

Dear Members:

In reviewing the INFORMATIONAL REPORT ON NOISE STUDY OF JACKSON COUNTY'S DRAG STRIP AT WHITE CITY, I find it to be inconsistent in content and context with regard to agreements mutually discussed between myself, John Hector, Carl Weisinger and former D.E.Q. director Bill Young.

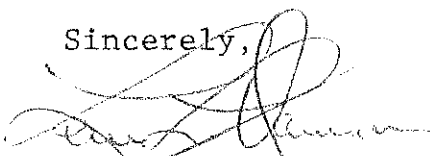
It is apparent that this report has been prepared for the signature of acting D.E.Q. director Michael Downs by John Hector. However, it also appears that Mr. Hector has taken advantage of the absence of former director Bill Young to again assume an inflexible attitude regarding the Sports Park issue. The report is filled with unobjective dissertation and could compel one to perceive a mental picture regarding the Sports Park and its operation that is totally inaccurate. This report has obviously been prepared in a manner to support a pre-determined recommendation and its acceptance as fact by your commission would be a travesty of fairness and objectivity.

I would strongly urge the commission to either reject this report in its entirety or allow a complete rebuttal on a point by point basis by the Sports Park officials before any decision is made.

If this request should fail I will have no other recourse but to ask the Legislature for corrective action to solve this problem once and for all.

Thank you for your thoughtful consideration.

Sincerely,



Lenn L. Hannon

STAFF REPORT

Agenda Item No. _____

Meeting Date _____

CONSIDERATION OF YARD DEBRIS DEMONSTRATION
GRANT REPORT

Date: October 17, 1983

Presented by: Dennis G. Mulvihill

FACTUAL BACKGROUND AND ANALYSIS

The problem is yard debris--limbs, brush, vines, leaves and grass--and how the 600,000 cubic yards which is generated each year in the metropolitan area is disposed of. As can be seen in Figure 1 (see Executive Summary, Yard Debris Demonstration Project Report, p. 2), most people either compost, give it to the garbage collector or self-haul it to the landfill. But some people burn it.

Burning is a problem because the Portland metropolitan area is designated a non-attainment area for National Ambient Air Quality Standards for total suspended particulates and the Department of Environmental Quality (DEQ) has identified open burning of yard debris as a significant controllable source of particulate air pollution.

To address this the Environmental Quality Commission (EQC) adopted a ban on backyard burning of yard debris in December 1980. Faced with possible legislative action, they lifted the ban in March 1981. The Legislature concluded that local governments did not have a reasonable means to dispose of the additional yard debris to be generated by the ban and adopted SB 327. The Bill prevented the EQC from re-instituting the ban until June 30, 1982. Thereafter, EQC could only impose a ban if such prohibition was necessary to meet air quality standards and alternative disposal methods were reasonably available to a substantial majority of the population.

Subsequent to this action, Metro was awarded a \$265,000 grant from the Environmental Protection Agency (EPA) in January of 1981. The purpose was to "provide funding for the demonstration of usable alternative uses of yard debris to prevent the resumption of backyard burning and the loss of air quality benefits." "The demonstration program would be managed and evaluated by a regional coordinator and a Project Steering Committee made up of DEQ, Metro, City of Portland and other pertinent jurisdictions."

In May 1983 the Steering Committee issued a report on the Demonstration Program. "The purpose of this report is to evaluate the Yard Debris Demonstration project and outline collection, processing and market options which could be pursued in the

future."¹ Following this a public forum was held asking local jurisdictions, the hauling industry and citizens to evaluate the appropriateness of the report's findings and recommendations. (See attachments.)

The purposes of this staff report are to assess whether the goals and objectives of the grant project were achieved and to discuss future actions by Metro.

The project goals established by the grant were to "demonstrate publicly acceptable and feasible alternatives for the recovery of yard debris in the Portland metropolitan area. Based on the final evaluation of the project, to recommend an implementable regional yard debris recovery program."

To meet this goal the grant established the following objectives which needed to be achieved:

1. "Demonstrate that a total ban on backyard burning in the Portland metropolitan area can be implemented without placing an additional burden on the area's scarce landfill capacity."
2. "Demonstrate that special processing techniques can convert the yard debris waste stream into a valuable usable resource."
3. "Provide a better information base to implement a viable alternative program on a permanent basis."

Based on information found in the report and the results of the public forum, it has been determined that the demonstration of the goals and objectives was not totally achieved.

The information used to arrive at this conclusion is developed below. It includes a discussion of what needed to be demonstrated, what was demonstrated, economic factors to consider, and public forum results and concludes with policy options.

A regional yard debris recovery program is composed of three elements: collection, processing and markets/reclamation. The information base created by the grant contains adequate information on only two-thirds of the equation, collection and processing.

"According to the grant request work scope, the strategy was to process the material into several possible products. Once the products were established, markets would be developed and (hopefully) the private sector would take over the operation with

¹A Demonstration Project for Recycling Yard Debris, March 1983, p. 3.

Metro supplying the waste material."² Some buyers were developed in the fuel, soil additive and ornament markets, but they were either very limited in volume needs or a cheaper product became available.

The processors involved in the Demonstration project have suggested that the problem is one of volume, and claim that "sufficient markets can be developed to move all the finished product."³ Supply and demand factors control this development.

The supply/volume of the material is dependent on public participation, seasonal fluctuation, storage space and processing time. The demand for the material relates directly to the dependability of a specific supply, uniform content and the price of competing products. Processors feel that if public participation and a dependable supply are delivered by government, they can handle the remaining factors and develop the markets. It was not demonstrated by the yard debris project that diversion efforts or other methods instituted by government could deliver an adequate supply or that the effort would create a stable market.

The lack of developed markets limited achievement of the project's objectives; consequently, the goals could not be achieved.

- Because the processors are not able to guarantee accepting yard debris material for an indefinite length of time, a burning ban's impact on the landfill could not be assessed (objective 1). It is worthy of note that if the 13 percent (84,784 yd³) burned each year was diverted to St. Johns its closure would be hastened by 25 days over the next five years.
- Conversion of yard debris into a "valuable usable resource" was partially accomplished. The converted material is usable as a soil additive compost and fuel, but it is not valuable enough to justify processing it on a large scale; there is a limited demand for the product at the price needed for processing (objective 2).
- The flow of yard debris that can be expected using different collection systems does "provide a better information base" (objective 3). It would provide some of the information necessary to recommend an "implementable regional yard debris recovery program."

The grants goals, objectives and work scope directed that a supply of yard debris be created first then develop a market. This strategy is at odds with information contained in Metro's Waste Reduction Plan. The Waste Reduction Task Force in developing their recommendations (which subsequently became Metro's Waste Reduction

²A Demonstration Project For Recycling Yard Debris, March 1983, pg. 2-20.

³Mark Hope, Waste By-Products, Memo, August 11, 1983.

Plan) found from their studies "that the marketing of the material (yard debris) defined the other system components of collection, storage and processing."

This theme was repeated in the California Waste Management Board's "Municipal Composting Handbook." "To ensure a successful composting program it is essential to perform an end use survey in the initial planning stage. The survey should identify how much compost can be marketed and used by the community, the product quality required for each designated end use and a realistic market value for the product. The market survey will help define the size, the processing requirements and the economic feasibility of the operation."

Discussion and testimony at the public forum focused on the issue of "publicly acceptable and feasible alternatives." There was general agreement that yard debris should not be burned if there are collection or other alternatives available. However, it was made clear that "publicly acceptable and feasible alternatives" (see grant goals) for the recovery of yard debris are, to a significant degree, determined by cost, not just by the availability of a collection system as suggested by the number 1 finding in the Report (see Executive Summary, p. 4). As one county administrator observed, "If our analysis (of the Report) is correct, the demand for service is only generated by a free program with easy access (see attachment). Those 'free' programs represent a significant cost to the sponsoring public agency which is ultimately borne by the taxpayer. Given the current economic health of most governments in the Metro region, we doubt that yard debris will receive serious consideration in any local government budget. You must ask yourself whether or not the findings of the report suggest that there is a public demand. We would suggest that it will be very difficult to justify, based on the data gathered by the Steering Committee."⁴

Two other messages came out of the public forum:

- Collection and processing alternatives need to be more adequately developed and priced before a required program is designed and implemented.
- More promotion and public education of the yard debris problem and solutions is needed.

A successful regional yard debris program must include the cooperation of the local jurisdictions, so, the concern over the adequacy of the information on collection and processing alternatives issued at the public forum needs to be addressed. The Yard Debris Steering Committee's Report's recommendations placed the

⁴Clackamas County testimony at public forum on results of curbside collection demonstration portion of Report. This statement was corroborated by several local jurisdictions' and public testimony.

development of additional information and action on the local jurisdictions. Given current fiscal pressures, Senate Bill 405 and undeveloped markets for processed yard debris, their reluctance to spend any money experimenting is understandable.

Three elements may change this attitude.

- A market contract that is contingent upon the delivery of a certain supply for a certain price.
- The experience of having developed their own recycling plan as required by Senate Bill 405.
- The March 1984 election on a sales tax.

This concludes the assessment of the grant, but a broader discussion of yard debris is also necessary. Metro's responsibility for yard debris is not limited to this grant. The Waste Reduction plan states that the long-term goals will be met by "assuring the handling, processing and reclamation of all separated yard debris." In essence, the goals of the plan and of the grant are the same (see attachment).

The information generated by the yard debris project was incomplete for purposes of demonstrating achievement of the grants goals and objectives. The results do suggest that a regional yard debris recovery system is feasible and identified missing elements/role options for Metro beyond promotion, education and conducting the demonstration project.

The key policy question that has evolved out of the yard debris demonstration project is whether Metro should proceed immediately with the development and implementation of methods to increase the supply of yard debris (diversion ordinance, franchise ordinance, rate incentives, technical assistance, support funds, promotion and education) or conduct a feasibility study of the markets potential. (How much might be marketed and used for what purpose and what the prices of competing products are.)

Arguments for each option are developed below.

Immediate:

- The material can be processed into another usable form and because the raw material is abundant, the markets will develop if there is confidence in the supply. Even if the markets fail, the material can be landfilled or the unsold processed yard debris could be bought and used as final cover.
- The fact that processors have spent over \$100,000 for equipment, is a demonstration of their belief in the future of the product and intent to receive and process yard debris and wood waste in the future.

Feasibility Study:

- The combined costs of collection, processing and marketing will determine whether the material can be recycled on a large scale. It determines the public's participation level, resulting volumes and whether processed yard debris will be purchased instead of a competing product. This information is not available.
- Effective alternatives are available to increase the supply, but the most significant question for all involved is whether the market will be there in time also. A feasibility study would remove as much of the risk as possible.

An additional element to consider in either method described above is found in SB 405, Oregon's 1983 Recycling Opportunity Act; specifically, the definition of recyclable material. According to the bill, recyclable material means:

"any material or group of materials that can be collected and sold for recycling at a net cost equal to or less than the cost of collection and disposal of the same material."

A prospective market's interest in large volumes of processed yard debris is, in addition to cost, based on their confidence in the supply system; can a constant supply of yard debris be expected for a reasonable length of time? Inclusion of yard debris as a recyclable material, under the rules for implementing SB 405, would be one method of generating confidence. A market's interest should be easier to develop and maintain because the price that has to be met in order to receive a constant supply of yard debris is known. DEQ has just begun their work on the necessary rules that must be adopted by January 1, 1985.

There is a broader policy question that must be addressed before concluding the yard debris question: If a limited amount of money is going to be spent on increasing recycling, where is it most effectively used? The Systems Planning effort will produce information that allows a comparison of roles, costs and gains. If the results of that process shows yard debris to be a high priority, then the policy question developed by the preceding analysis becomes relevant. In the interim, there is a need to protect the investment made in the present yard debris recovery system and Metro's promotion and education efforts should be continued.

EXECUTIVE OFFICER'S RECOMMENDATION

The results of this project will be useful to those agencies responsible for air quality.

The information and supportive data produced by this project is excellent for use in Metro's System Plan development. It will help determine how to address the yard debris issue.

- The burning ban is not the key issue for Metro. Yard debris has a substantial impact on landfills. Landfill life could be extended approximately 20 days per year if all the material currently being buried were diverted. If all the material being burned were diverted to the landfill because of a burning ban, approximately five days of landfill life would be lost each year.
- The collection/separation system and markets needed for a diversion are not sufficiently developed.
- The project demonstrated effective promotion and education methods of use. The FY 1983-84 yard debris budget is aggressively applying this knowledge to support the existing system and protect the investment made in this issue.

All activities by Metro are consistent with the FY 1983-84 budget and the Waste Reduction Plan. No action is required.

COMMITTEE CONSIDERATION AND RECOMMENDATION

DM/gl
0150C/366/11/14/83

EXECUTIVE SUMMARY

INTRODUCTION

The problem is yard debris--limbs, brush, vines, leaves and grass--and how to dispose of over 600,000 cubic yards (cu yd) which is generated each year in the metropolitan area. As can be seen in Figure 1, some people burn their yard debris and some illegally dump it on the side of the road. Most people either compost, give their yard debris to the garbage collector with the rest of the garbage, or haul it themselves to a landfill.

The Portland metropolitan area is designated a non-attainment area for National Ambient Air Quality Standards for total suspended particulates (TSP). The Department of Environmental Quality (DEQ) has identified open burning of yard debris as a significant controllable source of particulate air pollution in the Portland metropolitan area. Thus, a need has been identified to develop alternatives to open burning. Landfilling is not an acceptable alternative since capacity is strained at present.

In December 1980, the Environmental Quality Commission (EQC) adopted a ban on backyard burning of yard debris. Metro received an Air Pollution Control Program Grant in February 1981 to develop acceptable ways to dispose of yard debris which would have been generated by the ban. The EQC lifted the ban in March 1981 because the Commission was faced with possible action by the Oregon Legislature to lift the ban. The Legislature was concluding that local governments did not have a reasonable means to dispose of additional yard debris. The Legislature then adopted Senate Bill 327 which prevented the EQC from re-instituting the ban until June 30, 1982. Thereafter, EQC could only impose a ban if such prohibition was necessary to meet air quality standards and alternative disposal methods were reasonably available to a substantial majority of the population.

PROJECT SCOPE

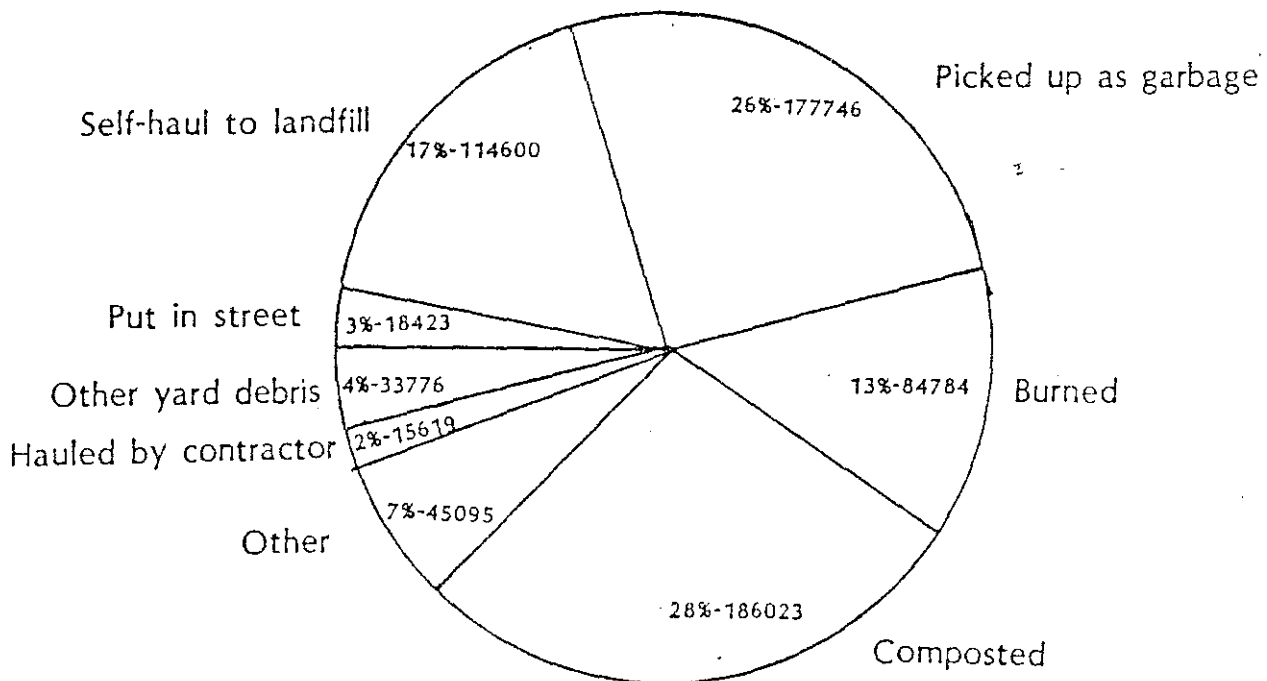
The objectives of this project were: 1) to demonstrate that a total ban on backyard burning in the Portland metropolitan area can be implemented without placing any additional burden on the area's scarce landfill capacity; 2) to demonstrate that special processing techniques can convert the yard debris waste stream into a valuable, usable resource; and 3) to provide a better information base to implement a viable alternative program on a permanent basis.

The project goal was:

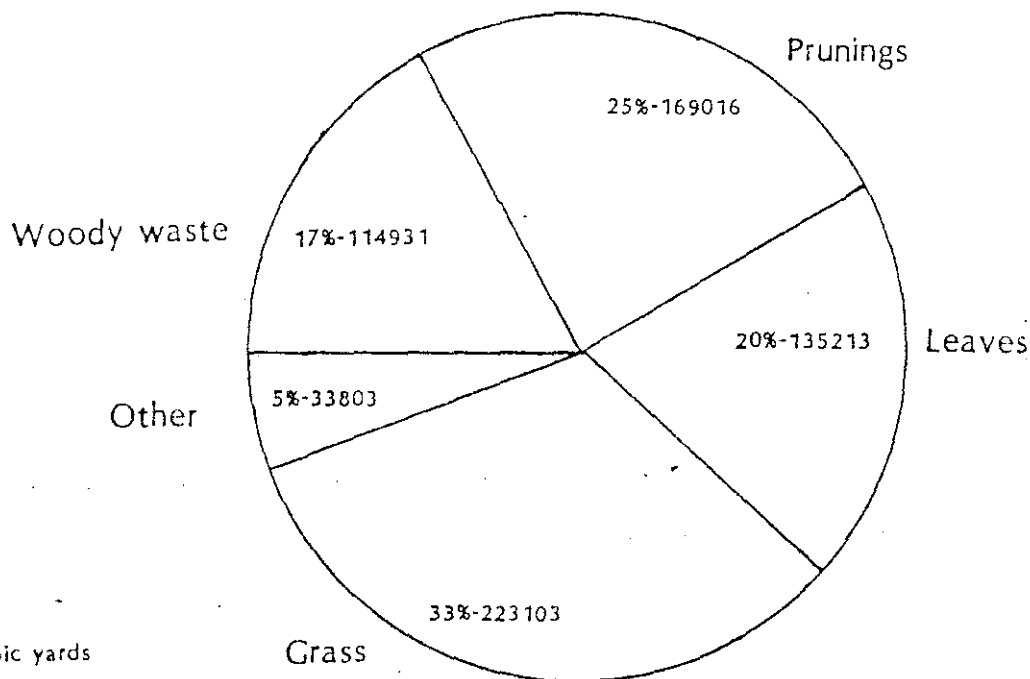
To demonstrate publicly acceptable and feasible alternatives for the recovery of yard debris in the Portland metropolitan area and to recommend an implementable regional yard debris recovery program.

The work plan was based on the following assumptions:

What happens to yard debris?



What is yard debris?



Values in cubic yards

Source: DEQ Survey, 1979



YARD DEBRIS QUANTITIES

FIG. 1

1. There is an immediate need for a cost-effective system to adequately handle increasing amounts of yard debris due to a possible yard debris burning ban by DEQ.
2. Pressures on existing landfills discourage the continued disposal of increased volumes of material.
3. A workable solution must be based on proven examples of yard debris recovery programs, either locally or in other parts of the U.S.
4. There is a need to determine the volume and composition of yard debris as part of developing a comprehensive long-range program and market.
5. If there is an educational campaign, there will be an increase in the level of participation by the general public to do their own composting. Given either a homeowner's inability or unwillingness to compost/mulch green waste, a comprehensive program may have to address both green waste and wood waste (twigs, branches and tree limbs).
6. According to DEQ, open burning contributes to the particulate non-attainment status for the Portland Air Quality Maintenance Area (AQMA). According to the EQC and the DEQ, if viable alternatives to open burning are not available, a burning ban would be difficult to initiate and administer.

With a Coordinating and a Steering Committee of local officials, the Yard Debris Demonstration Project was conducted from May 1981 to September 1982. Metro was the coordinating agency for the project. Collection and processing alternatives were demonstrated to recover, process yard debris into marketable products. The demonstration project was conducted in several phases and an evaluation was completed for each. The purpose of the Phase Evaluations was to present the data on the collection and processing alternatives. The Phase Evaluations are in Part 2 of this report. The discussion and analysis of the alternatives are presented in Part 1.

PROJECT DESCRIPTION

The purpose of this report is to evaluate the Yard Debris Demonstration Project and outline collection, processing and market options which could be pursued in the future. The Demonstration of recovery processes and collection systems occurred in several phases over a 1-1/2 year period. The initial phase in May 1981 sought to recover only woody yard debris in a region-wide clean-up week. Shredding Systems, Inc., a processing service, demonstrated that with minor modifications, a mobile shredder could produce a marketable fuel product. In Phases II, III and IV, Waste By-Products, Inc., a waste recovery firm, showed that a Medallion 910 Grinder could process all types of yard waste into

salable fuel. McFarlane's Bark, Inc., a bark and wood products firm, improved their existing receiving site and purchased a hammermill as part of their composting demonstration. Toward the end of the project, Grimm's Fuel Co., a bark and wood products firm, started receiving yard debris and began producing a compost material. The processing alternatives demonstrated are outlined below and summarized in Table 1.

Shredding Systems, Inc.: Mobile shredding to "hog" fuel (correct usage is "hogged" fuel, but common usage is "hog" fuel).

Waste By-Products, Inc.: Mobile grinding to hog fuel. Pre-grinding, screening and magnetic separation, grinding to hog fuel and compost.

McFarlane's Bark, Inc.: Hammermilling, screening and composting in large stockpiles to compost products.

Grimm's Fuel Co.: Hammermilling, screening and composting in windrows to mulch/compost or hog fuel products (proposed).

Six collection alternatives were demonstrated in Phases II, III and IV. On-call and on-route curbside collection by private haulers and municipal crews were conducted. Two clean-ups were also held. A summary of collection alternatives demonstrated are in Table 1.

- Case Study 1: Oregon City - On-route curbside collection by city crews.
- Case Study 2: Lake Oswego - On-call curbside collection by franchised hauler.
- Case Study 3: West Linn - On-call curbside collection by city crews.
- Case Study 6: City of Portland - Neighborhood clean-ups.
- Case Study 7: City of Beaverton - City-wide clean-up by city crews and franchised haulers.
- Case Study 8: Southeast Portland - On-route curbside collection by non-franchised hauler.

FINDINGS

This section summarizes the results of the analysis of the Yard Debris Demonstration Project.

General

1. It has been demonstrated that with an adequate collection system, recycling of yard debris into hog fuel, mulch and compost is a publicly acceptable and feasible alternative for the recovery of yard debris in the Portland metropolitan area. Although an area-wide collection is not now in place, it has been demonstrated that feasible collection alternatives are available, or can be made available.

2. It has been demonstrated that it is less expensive to process and recover yard debris than landfill the material.

Total costs for processing yard debris, exclusive of revenues from fees or marketed product, is \$1.48-\$3.45 cu yd. The cost to landfill is about \$3.00 per cu yd.

3. As a result of the demonstration project, three processing centers were established as a viable alternative to burning or landfilling of yard debris. The alternatives are available to citizens, commercial landscapers and collectors who want to dispose of source separated yard debris and/or wood waste.

The processing demonstration project was a success. Most of the project effort was made in the processing alternatives and as a result, Waste By-Products in North Portland, McFarlane's Bark, Inc. in Clackamas and Grimm's Fuel Co. in Sherwood have set-up sites to receive and process yard debris and wood waste.

4. It has been demonstrated that mixed yard debris can be processed into marketable products.

It has been demonstrated that mixed yard debris can be processed and sold as hog fuel for use in industrial boilers. It has been demonstrated that mixed yard debris can be processed into a compost product. The two processors who will market the product expect to sell all the compost produced from their operations. Two hog fuel markets were identified in the project--Weyerhaeuser Corp. in Longview, Washington, and Willamette Industries in Albany, Oregon. They have paid for hog fuel produced in the project. Although McFarlane's and Grimm's market compost material at their sites, not enough information has been generated to determine the levels of demand for the product. McFarlane's and Grimm's are currently developing products from the yard debris processed during the demonstration.

5. The three processing centers conveniently serve a majority of the region when convenience is defined as a condition where a user is within a 20-minute one way trip of a processing center.

Three current processing sites are conveniently located in the region. They are located on or near major highways and are

Author's Note: At the time of publication, a fourth site started receiving yard debris. The Wood Yard, Inc., a bark and wood products company in Aloha, will contract with a processor to produce hog fuel. The Wood Yard will deliver hog fuel to the supplier of their unprocessed bark. They say they could receive 10,000 cu yd of yard debris each month. This site would serve the Aloha, Beaverton, Hillsboro, Cornelius, Forest Grove area in Washington County.

generally accessible to a majority of residents in the region. However, according to traffic analyses, areas of Washington County and East Multnomah County are lacking convenient processing sites.

6. It was found that the four processors were willing to take substantial risks (costs of equipment, site development, etc.) to participate in the demonstration project.

All processors who participated in the project purchased equipment and/or developed processing sites. All have spent well over \$100,000 for equipment with the intent of receiving yard debris and wood waste in the future. In addition, processors with sites committed labor and material from other parts of their operations, and risked having to dispose of stockpiled material if products could not be marketed. Some reasons risks were taken:

- Processors were encouraged by EPA funding and DEQ support
- Environmentally conscious
- Processors were in wood or waste processing business

7. In 1983, the three established processing centers will be capable of receiving and processing all the yard debris generated in the region.

On the basis of on-site storage, unloading spaces, site access and safety, the three processing sites could receive well over 600,000 cu yd of yard debris this year. Because of their small site, Waste By-Products must continue to sell and remove their material. McFarlane's and Grimm's, however, could accept and process over 400,000 cu yd of yard debris and store over 20,000 cu yd of compost.

8. To cover costs, Grimm's Fuel Co. must receive and process 5,350 cu yd per month of yard debris (64,200 cu yd per year); Waste By-Products needs 6,000 cu yd per month (72,000 cu yd per year); and McFarlane's needs about 5,000 cu yd per month (60,000 cu yd per year) for a total of 196,200 cu yd annually.

9. 196,200 cu yd of material could be generated annually, if the following occurred:

- divert all yard debris currently self-hauled by the public to landfills (100,000-115,000 cu yd);
- divert all yard debris currently hauled by landscapers (14,000-16,000 cu yd); and
- divert all yard debris currently being burned (76,000-85,000 cu yd).

From the data and interviews, the three processors need substantial yard debris and wood waste to continue operating. Waste By-Products, who produces a hog fuel product, needs more than just yard debris to sustain operations. They need wood

waste from commercial sources to improve the fuel value of the (sometimes very wet) yard debris.

10. Of the six collection alternatives demonstrated, on-route curbside collection by the private hauler was most effective in terms of economics, efficiency and public convenience.

Costs for a one-time pick-up of yard debris by a private hauler including disposal varied from \$4.50 - \$5.25 per loose cu yd and \$2.50 - \$8.00 per participant. The range of costs was large because of the difference in collection methods, housing density and yard debris generation per household of the collection alternatives. City sponsored clean-ups with voluntary labor and donated equipment were the least costly collection alternatives demonstrated. Low resident voluntary participation and small quantities of yard debris recovered were generally experienced when demonstrating collection alternatives.

11. Yard debris was received uniformly from March through November.

With a few exceptions, flows of yard debris were generally consistent except in the winter months (December, January, February) when flows fell off. Quantities of yard debris in Phase II (October-February) averaged over 1,000 cu yd per week and in Phases III and IV (March-September), average quantities increased to 1,400 and 1,700 cu yd per week (in first nine weeks) respectively. High flows were experienced in July and August when backyard burning was prohibited. The current rate is about 6,000 cu yd per month.

12. There were problems with contamination of yard debris during the demonstration project and it was found that the best way to prevent contamination of the compost and hog fuel products was to thoroughly inspect unloading of yard debris.
13. As a result of recovering over 65,000 cu yd of yard debris during the demonstration project (10 months), over 8,000 cu yd of landfill space was saved.

This savings is equivalent to increasing the St. Johns Landfill life over four days. Over \$36,000 in disposal costs would have been spent if the demonstration project had not been conducted.

Promotion

1. Promotion/public information efforts significantly increased calls to the Recycling Switchboard.
2. Highest interest (demonstrated by calls to the Switchboard) was generated when posters/brochures/flyers were widely distributed during an intense campaign. Mass media by itself resulted in lower level of interest.

3. According to a questionnaire survey, more participants learned of the program by radio ads than by newspaper ads.
4. The number of calls to the Recycling Switchboard increased just after new television spots were aired.
5. The number of calls to Switchboard increased during spring and fall, and decreased during winter and summer months.
6. Frequent news releases leading to news stories produced an increase in calls and a decrease of calls was experienced during periods when no news releases were issued.

RECOMMENDATIONS

Citizens (generators, transporters, disposers)

All citizens in the region should use available recovery alternatives to recycle yard debris.

1. Citizens who generate yard debris should compost yard debris on their property rather than disposing of the material.
2. Citizens who generate yard debris, and who do not have separate collection alternatives available, should try to keep yard debris separate from garbage and consider either contracting with a hauler to collect separated material or self-hauling the material to a processing center.
3. Citizens who need ground cover or soil additives for their gardens should purchase mulch or compost from the processing centers producing this material from yard debris.
4. Citizens who do not have separate collection of yard debris should encourage their local jurisdictions to provide service.
5. Citizens who do not have separate collection of yard debris should consider conducting small neighborhood projects and contracting with a hauler to collect material and take it to a processing center.

Local Jurisdictions (generators, transporters, collection authorities, disposal and fire districts)

All local jurisdictions should identify options for the collection of source separated yard debris and provide for those options if feasible.

1. Local jurisdictions should thoroughly investigate all collection alternatives to determine which would be most effective for their local situation. Local jurisdictions who start collecting yard debris should conduct the service on a trial basis to get information on costs within their system.

2. Local jurisdictions which generate and transport yard debris should keep the yard debris separate from garbage and take it to processing centers.
3. Local jurisdictions which are currently collecting separated yard debris using city crews should consider continuing this service.
4. Local jurisdictions which have collection franchise authority should consider having their hauler collect separated yard debris by sponsoring neighborhood clean-ups, or by conducting on-route or on-call collection projects.
5. Local jurisdictions with disposal authority should consider diverting separated yard debris from solid waste facilities.
6. Local jurisdictions with disposal authority should enforce scavenger dumping of yard debris and open burning regulations.
7. Local jurisdictions without franchises should consider organizing neighborhood clean-ups and/or contracting with private hauler(s) to conduct on-route or on-call collection projects.
8. Local jurisdictions which need ground cover or soil additives for public areas should consider purchasing mulch or compost from the processing centers producing this material from yard debris.
9. Local jurisdictions located far from processing centers should consider establishing temporary sites for receiving yard debris during times of high generation. Stockpiled yard debris could then be processed by mobile processing equipment and transported to processing centers or to markets.
10. Local jurisdictions should support regional and state public awareness efforts by assisting with the distribution of promotion and education materials.

Regional (disposal authority)

- Metro should take appropriate measures to keep existing processing operations viable.
1. Metro should divert separated yard debris from their solid waste facilities.
 2. Metro should enhance public awareness of composting, yard debris collection projects and the processing centers by conducting a comprehensive promotion program. Metro should consider promoting the use of yard debris garden products.
 3. Metro should consider including yard debris as a material to be recovered in residential recycling programs proposed by Metro.

4. Metro should assist local jurisdictions in locating and siting temporary yard debris receiving/processing sites if requested by local jurisdictions.

State (disposal authority)

DEQ should take appropriate measures to keep existing processing operations viable.

1. DEQ should take steps to divert separated yard debris to processing facilities.
2. DEQ should enhance public awareness of composting, yard debris collection projects and the processing centers by assisting Metro in its promotion and education efforts. DEQ should consider promoting the use of yard debris garden products.
3. DEQ should periodically inspect processing centers to determine whether they are safe and environmentally sound.
4. DEQ should provide financial incentives (tax credits, etc.) to assist processing centers.

Commercial Haulers (transporters)

Commercial haulers should participate in the efforts of citizens and governments to recycle yard debris.

1. Commercial haulers with or without collection franchises should work with local jurisdictions to organize separate collection of yard debris.
2. Commercial haulers who offer drop box service should inform customers that they could save money on the disposal charge if only yard debris or wood waste was disposed.
3. Commercial haulers should determine which regular customers produce contamination-free loads of yard debris and wood waste.
4. Uncontaminated loads of yard debris should be taken to processing centers rather than disposed at landfills.

Processors (disposers)

Processors should continue to process and sell yard debris brought to their sites and they should continue to develop and sell the yard debris garden/fuel products.

1. Processors with sites should consider contracting with commercial haulers to receive loads of pure yard debris or wood waste.
2. Processors with sites should work closely with Metro, DEQ and local jurisdictions to inform them of project needs.

3. Processors with sites should ensure that their operations are safe and environmentally sound and are in accordance with local regulations.
4. Before making significant supply commitments, processors who produce compost or mulch products should be certain about the compost process; product consistency (quality); and production rate.
5. Processors with sites should consider joint marketing of products.

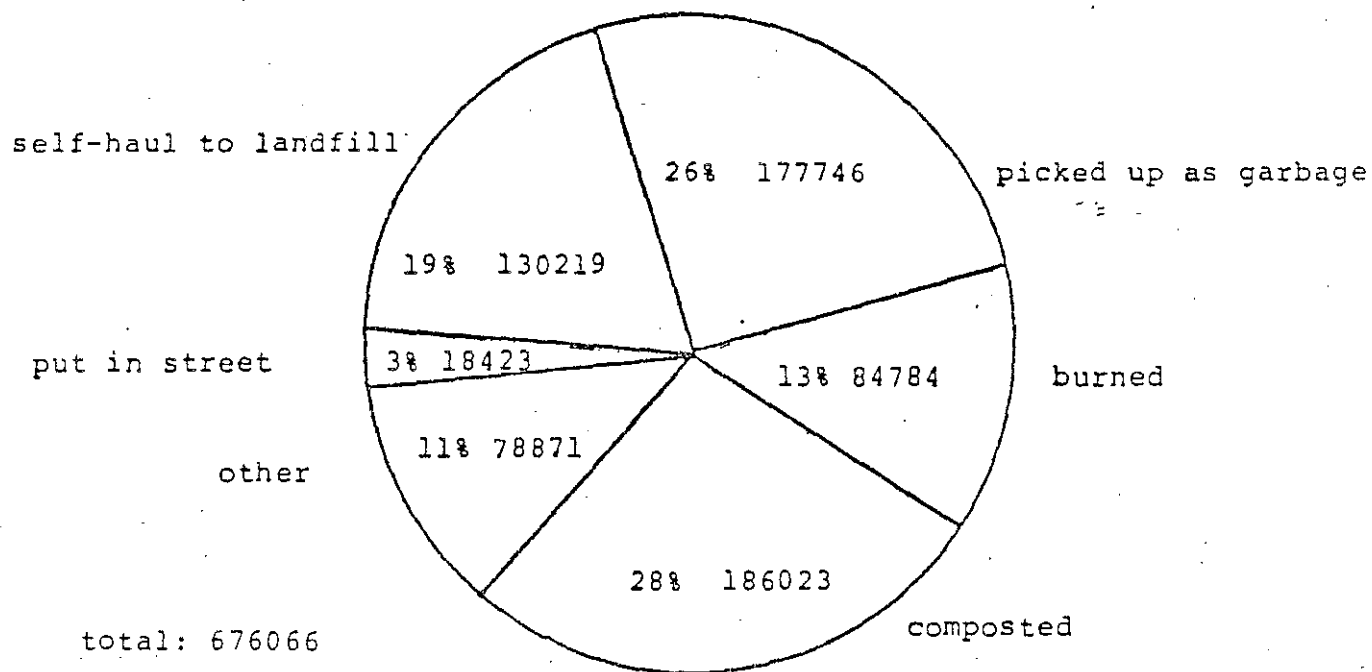
TABLE 1

Program Summary

<u>Phases</u>	<u>Dates</u>	<u>Collection Alternatives</u>	<u>Processing Locations</u>	<u>Yard Debris Quantities</u>	<u>Level of Participation</u>	<u>Promotion</u>
I (woody waste only)	May 16-24 1981 (1 week)	West Linn - Rossman's Sanitary Service Troutdale - Edwin O. Ege Sanitary Service City of Portland - Clean-ups	St. Johns Landfill Rossman's Landfill Obrist Pit	1,613 cy. yds.	610	News Releases Flyers Brochures PSA TV PSA Radio Newspaper Ads
II	October 23- February 28 1982 (19 weeks)	Case Study 1 - Oregon City Case Study 2 - Lake Oswego (2 collections) Case Study 3 - West Linn	St. Johns Landfill (Case Study 4) McFarlane's Bark (Case Study 5)	20,743 cu. yds.	5,657	Radio Spots Brochures Newspaper Ads PSA Tags News Releases
III	March 1- June 30 1982 (17 weeks)	Case Study 6 - City of Portland Clean-ups Case Study 7 - Beaverton Clean-up Case Study 8 - Waste-Go Services (S.E. Portland)	St. Johns Landfill McFarlane's Bark	24,141 cu. yds.	16,758	Radio Spots News Releases Brochures Presentations
IV	July 1- September 30 1982 (13 weeks)	-	St. Johns Landfill Waste By-Products McFarlane's Bark Grimm's Fuel	18,336 cu. yds.	6,608	Presentations

WC:bb
12/9/82

YARD DEBRIS FACTS



total: 676066

values in cubic yards

source: DEQ survey 1979

LANDFILL IMPACTS¹

If all yard debris currently landfilled were diverted from the landfill, the landfill life would be extended by 20 days per year.

If the 84,784 yds³ of yard debris currently being burned were diverted to the landfill due to a ban on backyard burning approximately 5 days of landfill life would be lost each year.

¹ 15000 yds³ of yard debris is the equivalent of one days refuse received at St. Johns landfill.

WASTE REDUCTION GOAL

The Metro waste reduction goal is to decrease solid waste volumes by reducing the amount of solid waste generated by reclaiming materials instead of disposing of them.

Long-term Goal -- Reduce the amount of solid waste disposed by 83 percent:

- . by assuring the handling, processing and reclamation of all separated yard debris;
- . by reducing the residential and commercial solid waste by 30 percent through the recovery of all available recyclable materials; and
- . by reducing the remaining residential and commercial processible solid waste by 75 percent through resource recovery.

Short-term Goal -- Reduce the amount of solid waste disposed by 56 percent (in 1985):

- . by assuring the handling, processing and reclamation of 40 percent of all separated yard debris;
- . by reducing the residential and commercial solid waste 2 percent per year by recovering one-third of all available recyclable materials (approximately doubling the amount of recyclable materials currently being recovered);
- . by reducing the remaining residential and commercial processible solid waste by 66 percent through resource recovery.

YARD DEBRIS RECOVERY PROJECT

The Task Force recognized that Metro involvement in a yard debris recovery project was justified due to the potential impact of a ban on backyard burning on the regional solid waste disposal system. Several options are available in developing a project; however, the Task Force realized that the marketing of the material defined the other system components of collection, storage, and processing. Recommendations by the Task Force assigned responsibility and operation to the private sector and held the waste generator accountable for system costs.

Metro should be active in the following project elements:

- . develop an educational program for citizens in home composting of yard vegetation;
- . promote collection by existing private hauling systems;
- . develop convenient centralized facilities for material storage, possibly offering a location at area disposal sites for storage and processing;
- . promote processing through composting and chipping in the following priorities: 1) utilization at the residence; 2) neighborhood utilization projects; 3) central processing facilities; and 4) disposal of processed material;
- . assist in seeking markets for the collected and processed material, possibly providing coordination for a regional effort.

In order to utilize the material at the source, the Task Force stressed the need to first undertake a household compost education project. The key to the use of the remaining material is Metro's assistance in securing markets for the processed material. In addition, Metro should develop convenient storage facilities at area disposal sites.

PUBLIC FORUMS

PUBLIC FORUMS FOR REVIEW OF THE STEERING COMMITTEES RECOMMENDATIONS WERE HELD AS FOLLOWS:

DATE: August 18, 1983

TIME: 3:00 p.m. - 5:00 p.m. and 7:00 p.m. - 10:00 p.m.

PLACE: Metro Council Chambers

NOTICES MAILED: 400 throughout region

INDIVIDUAL CONTACTS BY STAFF - 18 cities and counties administrators

SPECIAL INTERESTS CONTACTED - waste collectors materials processors

MEDIA RELEASES - 3 releases to 50 media sources each time

WRITTEN RESPONSES RECEIVED: FOUR FROM LOCAL JURISDICTIONS
NINE FROM PRIVATE CITIZENS

ATTENDANCE; APPROXIMATELY 80



METROPOLITAN SERVICE DISTRICT

Providing Zoo, Transportation, Solid Waste and
other Regional Services

Otem L

May 23, 1983

Rick Gustafson
Executive Officer

Metro Council

Cindy Banzer
Presiding Officer
District 9

Bob Oleson
Deputy Presiding
Officer
District 1

Richard Waker
District 2

Charlie Williamson
District 3

Corky Kirkpatrick
District 4

Jack Deines
District 5

George Van Bergen
District 6

Sharron Kelley
District 7

Ernie Bonner
District 8

Bruce Etlinger
District 10

Marge Kafoury
District 11

Gary Hansen
District 12

The Honorable Rick Gustafson,
Executive Officer
Metropolitan Service District
527 SW Hall Street
Portland, Oregon 97201

Dear Rick:

In February 1981, you established the Yard Debris Steering Committee with the following purposes:

1. To assist you with the Yard Debris Demonstration Project as part of the EPA Air Pollution Control Grant.
2. To recommend and monitor the yard debris detail work program.
3. To advise on alternatives which Metro might undertake to meet project objectives.
4. To involve state agencies, local jurisdictions and general public in the Metro area in the decision making process.

The Yard Debris Steering Committee has met regularly for the past two years and we feel a lot has been accomplished. As a result of the Demonstration Project, three private firms have set up sites to recover yard debris. We feel that a viable alternative to burning and landfilling is available to a majority of the citizens in the region.

Based on the findings of the attached Project Evaluation Report, we offer the following recommendations for your consideration:

527 SW Hall St.
Portland, OR
97201
503/221-1646

Honorable Rick Gustafson

May 23, 1983

Page 2

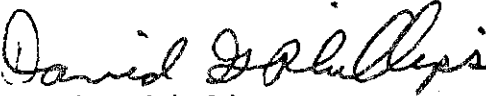
To improve the air quality of the region, and to reduce the region's dependency on landfills, Metro and the Department of Environmental Quality (DEQ) should take appropriate measures to keep existing processing operations viable. These measures include:

1. DEQ should take the appropriate measures to divert all yard debris from disposal to processing facilities.
2. Metro should continue the policy of separate handling and processing of all source separated yard debris brought to Metro facilities.
3. DEQ and Metro should encourage and provide technical assistance to all local jurisdictions to provide separate collection of yard debris.
4. Metro should provide promotion/education assistance to local jurisdictions who initiate separate collection of yard debris.
5. Metro should consider including yard debris as a material to be recovered in residential recycling collection programs proposed by Metro.
6. When there is a sufficient public demand for the service, commercial haulers should provide separate collection of yard debris.
7. DEQ should ban backyard burning in appropriate areas and appropriate times in accordance with the findings of the report.

We appreciate the opportunity of working with you on this project and look forward to periodically monitoring the program adopted by yourself and the Metro Council.

Thank you again.

THE YARD DEBRIS STEERING COMMITTEE


David Phillips,
Committee Chairman



STATEMENT OF ANN KLOKA BEFORE THE ENVIRONMENTAL
QUALITY COMMISSION, NOVEMBER 17, 1983

My name is Ann Kloka and I'm representing over 3000 members of the Sierra Club in the Portland Metropolitan Area.

We find the recommendation of the DEQ to continue open burning of yard debris to be very disturbing, especially since it seems to be heavily weighted by a public opinion poll.

We obviously have a particulate pollution problem in our airshed and DEQ studies have shown a dramatic correlation between the days open burning took place and those days we violated the air quality standards for particulates.

Particulates in the air affect visibility, but even more serious is the effect they can have on our health. Fine particulates are not just harmful to the elderly and those with respiratory diseases. They affect every one of us. One of the most frightening discoveries about fine particulates is their ability to carry carcinogens into our bloodstream by way of the lungs.

Particulates are annoying in other ways, too. Many people develop more serious colds; others cannot wear contact lenses on burn days. Joggers come home with their clothes reeking of smoke. Many people find that they must close their windows on a beautiful spring or fall day to keep out the offensive smoke.

The next time you take a deep breath of Portland air during the burn season, and inhale those fine particulates, ask yourself "Is it worth it? Should some people be allowed to freely pollute my air?"

Since there are alternatives available, there is no reason to carry on this polluting practice.

The EQC has controlled industrial emissions in our area and now it must control individual polluters, even if it means going against public opinion. If decisions are to be based on popular opinion rather than facts, what then is the purpose in having an EQC or a DEQ?

Pacific Northwest Chapter
SIERRA CLUB

2637 S.W. Water Street • Portland, Oregon 97201 • (503) ~~222-1953~~ 224-1538

cc: EOC
Downs
AQ

6200 SW 45th Ave.
Portland, Or 97221
November 10, 1983

Environmental Quality Commission
PO Box 1760
Portland, Or 97207

Re: 'Backyard burning regulations
to last through '86'
The Oregonian 11/9/83

Gentlemen and Ladies:

My two cents worth on the burning issue. I would prefer to see action taken which would nullify the need for backyard burning. Until recent years there was a convenient gulley or brushy area nearby for disposing of tree limbs and branches, thorny woody cuttings, grass clippings, leaves. No more. As matters stand today in Portland, most people must burn, or rent a trailer to take their debris 10 miles one way (from SW Portland) for each trip to the St. John's Landfill (or to a yard debris processing site far out of town), or leave the pruning and tree trimming undone. A drive through Portland neighborhoods provides evidence that those households that cannot afford the cost of professional tree pruners are simply foregoing the imposing difficulties placed on the beautifying of their property. Prolonged power outages, resulting from winter storms, also document this fact.

Very few homeowners burn their yard debris. It's really inconsequential, unless you're downwind from a nearby fire on a nice day. But somehow, it's imperative that the city council and the Metropolitan Service District, jointly or separately, come up with a program which allows homeowners to dispose of yard debris and compost material conveniently, and at minimal cost. The responsibility lies with them to minimize the need for backyard burning, for improving Portland's air quality, for encouraging Portlanders to enhance the beauty of their neighborhoods through the care of their trees and shrubs, and last but not least, for discontinuing the flow of burnable, chippable, and compostable yard debris to the city's rapidly overflowing city dump.

A program for achieving this has been presented to the city council on several occasions. If it takes a burning ban to get it implemented, then let's have it!

The city is the largest land owner in the metro area. Park areas abound - in all areas of the city. Every large park has areas not landscaped, and also areas used for disposal of park trimmings, grass, etc. On several occasions the city has provided areas in parks for depositing storm damaged trees and other debris. I'm suggesting that this precedent be established on a regular basis. The rebuttal that this trial proved unworkable because certain individuals used the areas for a garbage dump is no more valid than saying they have no control over those who would throw their trash in the streets. A few fines for the miscreants would solve this problem.

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
NOV 15 1983
OFFICE OF THE DIRECTOR

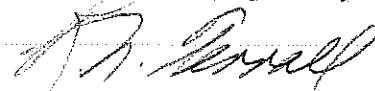
The proposal I am advancing would work as follows. Each suitable park would contain a drive-in area off the street, chained to prevent indiscriminate dumping. A designated section would be set aside for grass clippings, leaves, and other compostable material. With virtually no work this material would be turned into beautiful soil within 6 months as the worms do their work. Another section would receive limbs and other woody material. When the area becomes filled a portable chipper will come and turn it into chips. There is a demand for hogged fuel but the volume would probably not be that great. The main thing is that there be a place nearby where the householder can take his leaves and grass cuttings and the limbs from that overgrown monstrosity in his backyard that he has wanted to cut down for ten years.

There would be specified hours once or twice a week for leaving yard debris. There would be no entry unless someone was present. Volunteers? There could be a slight charge or not, since the city would be saving money in several ways. These areas would receive yard materials from homes, schools, businesses, etc. In fact, the greater the volume the more advantageous it would be since that would mean greater volumes kept out of the landfills. Since everything would be recyclable into fuel, or earth, the receiving areas would be forever re-usable.

As for myself, without burning, I do this very process in my own backyard. It works. However, most homeowners either do not have the space, the time, or the inclination, to handle their own. It needs to be made convenient for them to dispose of nearby.

Let's make Portland, once again, a city of beautiful neighborhoods.

Sincerely yours,



R. N. Terrall

cc: Metropolitan Service District

LEAGUE OF WOMEN VOTERS OF PORTLAND

519 SW. 3RD 228-1675
610 DEKUM BLDG.
PORTLAND, ORE. 97204



November 15, 1983

Oregon Environmental Quality Commission
P.O. Box 1760
Portland, Oregon 97207

RE: Backyard Burning

Dear Commission Members:

The League of Women Voters of Portland urges the Environmental Quality Commission to reject the recommendation allowing continuation of backyard burning through 1986.

Since 1968 the League of Women Voters of Oregon has opposed backyard burning. We have recognized it to be a significant contributor to seasonal air pollution within Portland. Through the years we have urged the DEQ to take a stand on this issue.

We question relying upon a telephone survey to justify continuing backyard burning. We would like to have seen the public given the choice of considering the option of recycling their yard debris. With the passage of the 1983 recycling law by the legislature, it would seem entirely appropriate and timely to ban the burning and thus encourage the development of a market for economical yard debris recycling.

We would hope that the Commission will have the courage and foresight to reject this recommendation. We urge you to take a leadership role against backyard burning for the health and welfare of all of our city's residents.

Sincerely yours,

Ann F. Porter

Ann F. Porter, President
LEAGUE OF WOMEN VOTERS OF PORTLAND

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

RECEIVED

NOV 16 1983

OFFICE OF THE DIRECTOR

*EQC
Downs
AQ*

My name is Robert Smith and I am a lifelong resident of Portland and a small business owner. I support a complete ban on open burning in the Portland area.

For years the Department of Environmental Quality has been telling us there would be a ban on open burning in Portland. This action has been postponed many times for many reasons. The time is now ripe to implement this ban. In fact, it is long overdue..

There are now at least four locations in the area, where yard debris may be taken for recycling. These centers are businesses that need yard debris to stay in business and provide jobs. Without a burning ban, their future may be questionable. Other alternatives to burning such as composting, are also available. I have been a homeowner in Portland for 12 years, and have not burned a single leaf.

The burning of yard debris causes considerable air pollution and poses significant health hazards. It is a large contributor to total suspended particulates in the Portland airshed on burning days. These are fine particulates, which find their way into the deepest cavities of the lungs and they may be carcinogenic. People with serious lung diseases such as emphysema are severely affected by these particulates.

For years now, emissions by industrial sources have been regulated. Automobile exhausts must meet certain standards before licenses are granted. And yet backyard burners are permitted to burn.

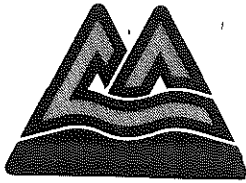
Air quality is not the sole responsibility of industry and automobile manufacturers, it is everyone's responsibility. Open burning is not an inalienable right. It was something that could be gotten away with in the past because the population density was such that it did not create serious problems.

This situation has changed. We live in a metropolitan area of over one million citizens. When even a small percentage of them burn, the rights of the others to clean air and good health are violated. The state has an obligation to protect these rights as diligently as it would protect the rights of citizens against thieves.

The public opinion poll taken by DEQ seems like a bit of a sham. So what if a large percentage of the people object to a ban. Is it not the American way that the majority should respect the rights of the minority?

Most other major cities prohibit open burning. Why must we lag so far behind? Why must we have delay after delay? I am outraged that this affront to my senses has been allowed to continue for so long. The time to take a positive step toward cleaner air is now.

Robert C. Smith
5856 NE 27th Ave.
Portland OR 97211




MULTNOMAH COUNTY OREGON

DEPARTMENT OF HUMAN SERVICES
DISEASE CONTROL OFFICE
426 S.W. STARK STREET
PORTLAND, OREGON 97204
(503) 248-3406

DENNIS BUCHANAN
COUNTY EXECUTIVE

MEMORANDUM

TO: ENVIRONMENTAL QUALITY COMMISSION

FROM: CHARLES P. SCHADE, M.D. 
HEALTH OFFICER

DATE: NOVEMBER 14, 1983

SUBJECT: AGENDA ITEM L NOVEMBER 18, 1983 EQC MEETING

I was extremely disappointed with the Department's informational report on Portland area backyard burning to be presented to you November 18. I am concerned about the report for two reasons, both of which are related to the health of the citizens of Portland in Multnomah County.

1. Direct health effect of continued inaction:

The whole reason for air pollution regulation is protection of the public's health. A substantial body of data exists which supports the reasonableness of the current particulate air pollution standard, based on total suspended particulate (TSP) and which suggests that a more stringent standard for very small particulates should be adopted. Indeed, the State of California has acted on this information by adopting a standard of 50 micrograms per cubic meter, 24-hour average, for particles less than 10 microns - the PM₁₀ standard. According to information presented to the Woodstove Advisory Committee, virtually all of the particles produced by vegetative burning are very small. These particles are the ones most likely to cause damage to lungs. Open air burning has already caused violations of the current TSP standard. I shudder to think of the violations of the California standard which would be occurring if we measured them. I am very seriously concerned about adverse effects on the health of our community, especially on people with pre-existing lung conditions.

The Environmental Protection Administration's clean air act is intended to protect the most sensitive individuals in the population from injury. Allowing continued violations of particulate standards will simply not accomplish this, especially in areas adjacent to or down wind of outdoor burners, where exposures may be substantially in excess of those observed at DEQ's monitoring sites.

The Department has the duty under state law to protect the health of citizens. Even against a majority of public opinion, it has the responsibility to persuade and educate the public and the duty to protect.

2. Indirect effects on regulation of woodstove emissions:

Currently the Woodstove Advisory Committee is grappling with a recommendation for standards for emissions of woodstoves in the State of Oregon. Although it is technically feasible to build woodstoves with very low emission rates and possible to maintain stoves in a condition which promotes cleaner air, doing so requires cooperation of industry, of woodstove users, and of government. If backyard burning is allowed in areas already prone to serious air pollution problems, what kind of a message does that send to the Woodstove Advisory Committee? Doesn't it suggest that manufacturers should simply encourage adverse public opinion? Substantial numbers of people already use woodstoves. A properly orchestrated campaign to arouse these individuals might either overturn the law or result in creation of meaningless regulations. If we are to reverse the deterioration in Portland's air quality and Medford's air quality that result from woodstoves, we must have effective regulations. Now is simply not the time to back off on the Department of Environmental Quality's long standing resolve to improve the air that we breathe.

I am shocked and dismayed that the Department has reversed its position of the past several years of working towards a ban of outdoor burning in the Portland Metropolitan Area. I am amazed that this major reason given is lack of support from local governments. This perceived lack of support could be a valid reason for making an adverse decision only if the health of the public were not involved. Worse yet, the Department has not documented its alleged lack of support except to say that local governments testified that they are unwilling to provide money to collect yard debris and reluctant to impose new collection costs on their constituencies. There is nothing in the report to suggest that a concerted effort has been made by the Department to inform local governments of the need for action and to persuade them of the wisdom of taking action.

Rather than adopting the staff's recommendation, I would urge the Environmental Quality Commission to consider adoption of Alternative #1 proceeding towards a ban with provisions for a hardship burn permit, although I cannot imagine what would constitute "hardship". In order to implement an effective ban, staff should undertake:

- a. An educational program similar to the one undertaken for woodstoves which emphasizes the health and economic consequences of open air burning, and promotes healthful alternatives such as composting.
- b. In cooperation with state and local health authorities, surveillance of respiratory illnesses associated with ambient air pollution resulting from open air burning and wood stoves.
- c. More intensive monitoring of particulate levels during burning and woodstove use seasons. This should involve wider geographic distribution of monitoring sites and frequency of measurement to document areas where especially high pollutant levels may be observed at certain times.
- d. To adopt a fine particulate standard such as the California PM₁₀ standard. The TSP standard does not adequately measure potential health effects when particulate matter is mostly of respirable size.
- e. An end to open air burning, as a part of Oregon's State Implementation Plan (SIP). Short of a Federal retreat on clean air standards, it's difficult for me to believe that Oregon will be able to achieve the Federal goals without curtailing or eliminating open air burning. The Federal goals, while health related, may not be strict enough for particulates. We should certainly not take any chance about undershooting that mark.
- f. In order to assemble medical and public health information in a fashion which is comprehensible to the public, the Department may wish to consider convening a health advisory committee as it did on the residential coal burning issue. As an alternative, the Department should consider the system used by California for adoption of air pollution standards in which the California State Department of Health Services provides formal consultation to the California Air Resources Board.

When given accurate and complete information, Oregon citizens have demonstrated time and time again that they can make enlightened decisions on difficult and controversial matters. The Department has a good record of providing accurate and timely information to the citizens. It should not abandon this issue because of an unfavorable poll response or an unenthusiastic reaction from local government. If the Department had done this in other issues we would not now be moving toward sewerage in east Multnomah County. As County Health Officer, I am only too aware of the extent of the opposition to sewerage based on cost alone. I hope the Department will be directed to carry out its mandate to protect the health of all Oregonians from air pollution produced by open burning.

6937 & 2131 (over)
Alabama, Q. 97219
Nov. 17, 1983

Rep. of Environ. Quality
Sept 1960
Federal, Dec 97209

Dear Sir:

Since I will be unable to attend

your Nov. 18th meeting, I am very

apologetic re: "Ecological Farming".

1. Of contribute 1.5% of the overall

participate, position in the future

also - which is minimal!

2. Of distro meet and share

(fungus and soil) material that

any other dispose means will

spread - especially re-cycling!

3. Of no fee

4. Permission to burn as a means

of dispose promote planting & caring

for ornamental & fruit bearing vegetables

on private property -

② Although that burning takes place

becoming used:

1. Special vegetative diseases

2. Promote the removal of, and

discourage the planting of our

unwieldy, volatile, oxygen

2. producing, Eastern North
 reducing, ornamental
 (The removal of 100,000 hogs,
 3. E. B. B. B., 1 year a 12 month fair
 because we could not maintain
 them by we could not have the
 necessary (turnings)
 3. Many, many property owners
 do not have the facilities or the
 money to pay for chips or
 re-cycling and we do not want
 need to increase our taxes for
 the government to administer
 will dispose of the material.
 as long as turning is permitted
 in days of good are movements
 (and I feel this could be any
 time of year as the accumulation
 would be less) The benefits of
 minimize pollution, distribution
 of material, prevention
 of well-felt landscapes and
 great and no expense of the
 he. However, some - some, tax-
 paying for waste, the benefits

of not permitting us to
easily dispose of our punning.

Sincerely,

Barbara B. Krey
(Mrs. Wm. C.)

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

RECEIVED

NOV 17 1983

OFFICE OF THE DIRECTOR

EXHIBIT B, BACKYARD BURNING

Regarding **BB 327**
Date: March 10, 1981

Chairman Beth Potts, Vice-Chairmen Tom Hartung,
Senator L.B. Day, Senator Ted Hallock, Senator Ed Padeley,
Senator John Powell, and Senator Jack Ripper:

This DEC map violates:

Constitution of Oregon
ARTICLE I
BILL OF RIGHTS

Section 20. Equality of privileges and immunities of citizens. No law shall be passed granting to any citizen or class of citizens privileges, or immunities, which, upon the same terms, shall not equally belong to all citizens.

This applies to all citizens of Oregon.
Yet, this map gives various degrees of backyard burning rights...discriminating against those in the Metropolitan Service District area.
This is unconstitutional.

Louise Weidlich

Mrs. Louise Weidlich, Director
Neighborhoods Protective Association
P.O. Box 19224, Portland, Oregon 97219

Section 10. Administration of justice. No court shall be secret, but justice shall be administered, openly and without purchase, completely and without delay, and every man shall have remedy by due course of law for injury done him in his person, property, or reputation.

Fear of Pollution Will Drive Men to World Government

PORTLAND METROPOLITAN AREA

Write or Call: **PROHIBITED BURNING ZONE** Update: June 1/8

Passed Senate. Now in House Environment & Energy Chairman, Wayne Fawcush

Vice-Chr. Varner Anderson **Bill Grannell**
Rick Bauman (Portland) **Gretchen Kafcory (P)**
Billy Bellamy **Al Niebel**
Liz Van Leeuwen
Larry Campoeri

(Created through H.J.R. No 8, 1963 (s.s.), adopted by people May 15, 1964)

ARTICLE XI-H POLLUTION CONTROL

Section 1. State empowered to lend credit for financing pollution control facilities. In the manner provided by law and notwithstanding the limitations contained in sections 7 and 8, Article XI, of this Constitution, the credit of the State of Oregon may be loaned and indebtedness incurred in an amount not to exceed, at any one time, one percent of the true cash value of all taxable property in the state:

(1) To provide funds to be advanced, by contract, grant, loan or otherwise, to any municipal corporation, city, county or agency of the State of Oregon, or combinations thereof, for the purpose of planning, acquisition, construction, alteration or improvement of facilities for the collection, treatment, dilution and disposal of all forms of waste in or upon the air, water and lands of this state; and

(2) To provide funds for the acquisition, by purchase, loan or otherwise, of bonds, notes or other obligations of any municipal corporation, city, county or agency of the State of Oregon, or combinations thereof, issued or made for the purposes of subsection (1) of this section.
(Created through H.J.R. 14, 1969, and adopted by people May 26, 1970)

Section 2. Only facilities seventy percent self-supporting and self-liquidating authorized. The facilities for which funds are advanced and for which bonds, notes or other obligations are issued or made and acquired pursuant to this Article shall be only such facilities as conservatively appear to the agency designated by law to make the determination 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.
(Created through H.J.R. 14, 1969, and adopted by people May 26, 1970)

Section 3. Authority of public bodies to receive funds. Notwithstanding the limitations contained in section 10, Article XI of this Constitution, municipal corporations, cities, counties, and agencies of the State of Oregon, or combinations thereof, may receive funds referred to in section 1 of this Article, by contract, grant, loan or otherwise and may also receive such funds through disposition to the state, by sale, loan or otherwise, of bonds, notes or other obligations issued or made for the purposes set forth in section 1 of this Article.
(Created through H.J.R. 14, 1969, and adopted by people May 26, 1970)

Section 4. Sources of revenue. Ad valorem taxes shall be levied annually upon all taxable property within the State of Oregon in sufficient amount to provide, together with the revenues, gifts, grants from the Federal Government, user charges, assessments and other fees referred to in section 2 of this Article for the payment of indebtedness incurred by the state and the interest thereon. The Legislative Assembly may provide other revenues to supplement or replace such tax levies.
(Created through H.J.R. 14, 1969, and adopted by people May 26, 1970)

Section 5. Bonds. Bonds issued pursuant to section 1 of this Article shall be the direct obligations of the state and shall be in such form, run for such periods of time, and bear such rates of interest, as shall be provided by law. Such bonds may be refunded with bonds of like obligation.
(Created through H.J.R. 14, 1969, and adopted by people May 26, 1970)

Section 6. Legislation to effectuate Article. The Legislative Assembly shall enact legislation to carry out the provisions of this Article. This Article shall supersede all conflicting constitutional provisions and shall supersede any conflicting provision of a county or city charter or act of incorporation.
(Created through H.J.R. 14, 1969, and adopted by people May 26, 1970)

- Prohibited Domestic Burning Area
- Seasonal Burning Area
- Year Around Burning Area



FIRE DISTRICTS



Ask President Reagan
to help repeal Clean Air Act
MSD subdivision

The credit of the State of Oregon is not to exceed the true cash value of taxable property

Abraham Lincoln Said It . . .

YOU CANNOT

bring about prosperity by discouraging thrift

YOU CANNOT

strengthen the weak by weakening the strong

YOU CANNOT

help the wage earner by pulling down the wage payer

YOU CANNOT

further brotherhood by encouraging class hatred

YOU CANNOT

help the poor by discouraging the rich

YOU CANNOT

establish sound security by spending more than you earn

YOU CANNOT

build character and courage by taking away mans initiative and independence

YOU CANNOT

help men permanently by doing for them what they could and should do for themselves

It was Abraham Lincoln who said:

"Shall we expect a transatlantic military giant to step the ocean and crush us with a blow? Never! All the armies of Europe, Asia, and Africa combined with all the treasure of the earth (our own excepted) in their military chest, with a Bonaparte for a Commander, could not by force take a drink from the Ohio or make a track on the Blue Ridge mountains in a trial of a thousand years..."

"At what point then is the approach of danger to be expected? I answer: 'If it ever reach us, it must spring up amongst us; it cannot come from abroad. If destruction be our lot, we must ourselves be its author and finisher. As a nation of free men we must live through all times or die by suicide.'"

Circulated by: Neighborhoods Protective Association
P.O.Box 19224, Portland, Oregon 97219

May 18, 1983

FORUM

Fallout on children's minds gravest danger of 'The Day After'

By ROBERT J. LOVELAND

ABC-TV will broadcast Sunday the movie "The Day After," which has been described by some as the most important film ever made for television. The movie portrays in graphic detail the effects on Kansas of a full-scale nuclear war between the United States and the Soviet Union. The movie largely is based on research outlined in a study by the U.S. Office of Technology Assessment entitled "The Effects of Nuclear War."

In my opinion

The content of "The Day After" is far more graphic and emotionally draining than any initial impression provided by published reviews. Parents should be extremely cautious in deciding whether to allow their children to view this movie.

In formulating personal and professional responses to the movie, my goal has been to

Robert J. Loveland is a clinical psychologist and program director of the Willamette Valley Family Center in Oregon City.

avoid creating a forbidden fruit situation in which warnings regarding the movie actually might increase the number of children who watch it.

But a warning is in order. While it is arguable that the movie should be required viewing for all adults, there are substantial risks in allowing junior high or grade school age children to see this movie. The organization Educators for Social Responsibility, as well as other child experts who have screened the movie, is recommending that children less than 12 years of age not see the movie and that young people between the ages of 12 and 16 should see the film only with adults who can discuss it with them afterward. This recommendation is a good one.

ABC-TV is predicting an audience of 60 million viewers, and it is highly likely, despite the network's warnings as to the adult nature of the movie, that thousands of young people will see the film inappropriately or without proper support. Parents should be alert to take steps to protect their young children as well as to provide assistance to any older children with whom the parents might want to share the experience.

The basis for this concern is not a belief that children must be protected from important issues, but rather that such material needs to be taught or presented at their level to avoid confusion and misunderstanding. A com-

monly held misperception is that children think like adults but have different feelings. Actually, children have similar feelings but think and process information quite differently. Furthermore, as with the feelings of adults, children's feelings flow naturally from the thoughts they might have about a particular issue. Prior to age 12, children think in a much more concrete and literal fashion than do adults. If complicated material is presented at an adult level to young children, it simply confuses and does not instruct. "The Day After" is an inappropriate educational tool for children.

The relationship between thoughts and feelings leads to anxiety or nervousness if one thinks aspects of his or her life are unpredictable. One also experiences various levels of depression if the individual comes to believe that aspects of his or her life are out of control. Anger and aggression naturally occur if one believes his or her needs are being frustrated. *-lack of hope for future*

An adult can learn to deal with these feelings by thinking through an issue. Children cannot easily do this, and that is why they need protection or assistance with any situation that involves perceptions of unpredictability, lack of control or loss of the security that their needs will be met.

"The Day After" does a masterful job of

eliciting all of these disturbing perceptions, which are related to adult fears of nuclear war and which could have a very negative impact on young people. Scenes and dialogue in the movie graphically demonstrate the unpredictability of a nuclear conflict and tend to create the impression one can do little to attempt to control its occurrence. Scenes of the aftermath clearly show the total thwarting of all human needs by a nuclear holocaust. As a result, the movie is likely to create in adult viewers a good deal of anger, anxiety and depression. Hopefully, it also will motivate them to take constructive action.

For young viewers, however, the effects may differ. Child experts and local school districts are concerned about a possible increase in subsequent weeks of anxiety-related behavioral disorders as well as serious depression among children and adolescents. The steps that parents take to provide proper supervision and support to their children largely will determine whether this prediction comes true.

For those parents who would like to have their 12- to 16-year-old children see the movie, it is recommended that the parents view the movie without the children and arrange for a later video viewing together. This would allow time for parents to sort out their own thoughts and feelings so they better can discuss the issues with their children. For parents

with older teen-agers, experts are recommending that it be viewed in groups of family and friends to provide mutual support.

One of the best ways to assist young people with potential feelings of despair, depression, anxiety or anger is to allow for open, non-judgmental discussion of their impressions regarding the movie or any aspect of the nuclear issue. The organization The Day Before will be conducting several free, family-oriented gatherings in Portland and Vancouver, Wash., where people can discuss feelings generated by the movie.

Most of all, the young people who see the movie need to be assured in the family discussions that the adults in their lives are doing something about the threat. All politics aside, no one wants a nuclear war. Young people can live with thoughts of danger, but they need to believe in the trustworthiness and problem-solving ability of adults. Many adults approach the nuclear issue with passivity and evasive withdrawal. This harms young people, many of whom, without having seen the whole movie, already believe that nuclear war is inevitable in their lifetime.

If parents take proper precautions, viewing "The Day After" with their older children could result in very positive discussions among generations and lead to much more constructive action being taken.

Choice of media stirs controversy

By PETER FARRELL

REMEMBER the Rev. Donald Wildmon and his Coalition for Better Television? A couple of years ago he was much in the news as he tried to force the networks, through pro-

of dialogue in a movie more than two hours long. The major thrust of the movie is not about avoiding nuclear war, but in showing what it is people should think about avoiding.

The movie is graphic enough that young children should not see it. Fortunately "The Day After" is self-censoring; its first half is so understated that fans of the "A Team" and "The Dukes of Hazzard" are unlikely to stay tuned for the war scenes. ABC says children age 12 or older safely can see the movie in the company of adults. Parents know their own children best and should make the decision. But the

Bears, movie both lack happy ending

By MIKE ROYKO

A FRIEND called with an urgent request. His television set had broken down, and he wanted to come over and

many important films, great drama and fine acting."

"Nonsense. The only thing I miss is being depressed."

And that is true. I never have seen any point in sitting in a movie theater or in front of my television set for two or three hours just to wind up depressed when the hero lies crumpled in the dust or the heroine coughs her fragile life away.

That is why I never watch Bears games anymore. The average Bears fan does not realize it, but he is reducing his

Dear Mr. Peterson,

cc: EQC
~~Downs~~ NW 11
AQ

Jeanne Roy wrote to ask me to speak before your commission Nov 18th. I teach school, so I will not be able to be there.

I am strongly opposed to backyard burning, for both air quality reasons and personal comfort reasons.

Sincerely,

Mary Lane Stevens

① EQC ② ~~Downs~~ ③ AQ

D. E. Q. Air Quality Div. -

Gentlemen:

We favor the staff
recommendation to continue
the twice-yearly burning
periods as now in force.

Yours very truly,

We and Mrs Walter S. Kriger

627-1st St.

Lake Oswego Ore. 97034.

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

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NOV 16 1983

OFFICE OF THE DIRECTOR

3327 SW Dosch Rd.
Portland, Ore. 97201
November 15, 1983

EQC
Downs
AQ

Environmental Quality Commission
P. O. Box 1760
Portland, Ore. 97207

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

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NOV 16 1983

Dear Commissioners:

OFFICE OF THE DIRECTOR

I would like to present this for your consideration in the matter of backyard burning to be discussed at your November 18 meeting.

I am Owen P. Cramer, a retired fire research meteorologist and forester. I've been professionally involved for many years with open burning, its effects, and its smoke from the standpoint of a Weather Bureau fire-weather forecaster, a Forest Service fire researcher, and a developer of meteorological control of certain kinds of emission sources through what have come to be known as smoke management plans. I have followed the backyard burning issue closely, and at Bill Young's request, have advised on the procedure for burn day selection.

While backyard burning thoughtlessly and unskillfully done can be a real nuisance to nearby neighbors, I am convinced that any prohibition of this burning, because of its unique scheduling, will not provide an appreciable improvement in Portland's overall air quality. I am also concerned that DEQ, instead of trying to do the best job of managing backyard burning, will continue to pursue their obvious target of prohibiting backyard burning. With DEQ recommending continuation of this burning for another two years, I believe some changes are in order.

Improve the backyard burning program

1. Carry on a citizen education campaign on techniques of burning that produce minimum smoke. (If it is anticipated that citizens can learn the intricacies of the yard debris recycling program, they can also learn to prepare their fuel and burn properly.) The smudgy, nonflaming fire in wet fuel is the real culprit. This area has been completely neglected.

2. Aggressively push alternative disposal methods -- composting chipping, and recycling wherever appropriate -- particularly to reduce the burning of material that should not be burned.

3. Do a little enforcement -- issue citations where smudgy piles continue to smoke beyond the designated time, or when the smoke becomes an obvious nuisance or becomes a traffic hazard.

4. Improve the burn day selection process by providing the meteorologist with the information he needs at forecast time (0600 local time). This includes:

a. Wind and temperature readings at the 2000 foot level over Portland from instruments on a TV tower in the Portland hills. The radiosonde readings at Salem are often neither representative nor indicative of these ventilation weather factors over Portland.

b. Nephelometer readings to indicate the concentration of smoke-size particulate already present in the air over the City and in air coming toward the City.

c. Provide the forecaster with a data drop at his home, if that is where he is expected to do this early morning chore 7 days each week.

5. By careful examination of the burn-day forecast record, tighten the burn-day requirements incorporating any new data sources to assure burning on only the days with excellent dispersion and low particulate readings.

6. Have another look at spreading the burning load by expanding the burning season -- particularly the autumn season into the summer. Climatologically the poorest ventilation occurs in the fall with the shortest days. With adequate restrictions on burn-day selection this would ease the impact on early fall days when everyone wants to burn.

Develop an index of backyard burning smoke particulate

Under existing State law, backyard burning cannot be terminated unless it can be shown that its prohibition is essential to the achievement of air quality standards. Smoke is predominantly very fine particulate and there is no standard for very fine or respirable particulate. However, on burn days, it does add an increment. This increment should be regularly estimated and reported using an index that is statistically, meteorologically, and physically valid. It is not enough to point to one or two days in past years when burning was mistakenly allowed with particulate loading already high and dispersion inadequate.

Such an index may be difficult to design -- it must take into account the background particulate, the same size particulate from other sources, and it must not be weighted to night hours when particulate from all sources accumulate in the lower layers of air. But such evidence of the actual impact of backyard burning on air quality will be necessary. Quantifying the actual impact should not be left to speculation or subjective evaluation as in the past.

There should be an annual report to the public on the back-yard burning program showing:

1. The frequency of various concentrations of smoke-size particulate on burn days and on no-burn days.
2. Explanation of any days on which burning was done and particulate loadings reached undesirable levels.
3. An accounting of the increment of backyard burning smoke particulate using the proposed index.

Consider the possibility that properly done backyard burning has its place

At least in portions of the Portland area that are forested, or semi agricultural, often somewhat mountainous, and characterized by larger properties with ample distance between neighbors, there is a place for the burning of dry, wood material in a flaming fire on days when the air is not already loaded with other pollutants and when dispersion conditions assure that there will be no accumulation of smoke concentrations near the ground. DEQ's job is to assure that the burning is done properly. I would hope that DEQ would resolve that it will aggressively manage the backyard burning program for the next two years to minimize any air quality impact and to assure that no such burning is done on problem days. They can do this if they redirect their efforts from trying to end backyard burning to running an effective program. The ingredients are available, and the public is behind it.

I appreciate this opportunity to present my views.

Sincerely yours,



Owen P. Cramer

1 (14) "Recyclable material" means any material or group of materials that can be collected and sold for
2 recycling at a net cost equal to or less than the cost of collection and disposal of the same material.

3 [(9)] (15) "Resource recovery" means the process of obtaining useful material or energy resources from
4 solid waste and includes:

5 (a) "Energy recovery," which means recovery in which all or a part of the solid waste materials are
6 processed to utilize the heat content, or other forms of energy, of or from the material.

7 (b) "Material recovery," which means any process of obtaining from solid waste, by presegregation or
8 otherwise, materials which still have useful physical or chemical properties after serving a specific purpose and
9 can, therefore, be reused or recycled for the same or other purpose.

10 (c) "Recycling," which means any process by which solid waste materials are transformed into new
11 products in such a manner that the original products may lose their identity.

12 (d) "Reuse," which means the return of a commodity into the economic stream for use in the same kind of
13 application as before without change in its identity.

14 [(10)] (16) "Solid waste collection service" or "service" means the collection, transportation or disposal of
15 or resource recovery from solid wastes but does not include that part of a business licensed under ORS 481.345.

16 [(11)] (17) "Solid waste" means all putrescible and nonputrescible wastes, including but not limited to
17 garbage, rubbish, refuse, ashes, waste paper and cardboard; sewage sludge, septic tank and cesspool pumpings
18 or other sludge; commercial, industrial, demolition and construction wastes; discarded or abandoned vehicles
19 or parts thereof; discarded home and industrial appliances; manure, vegetable or animal solid and semisolid
20 wastes, dead animals and other wastes; but the term does not include:

21 (a) Hazardous wastes as defined in ORS 459.410.

22 (b) Materials used for fertilizer or for other productive purposes or which are salvageable as such materials
23 are used on land in agricultural operations and the growing or harvesting of crops and the raising of fowls or
24 animals.

25 [(12)] (18) "Solid waste management" means (pre)vention or reduction of solid waste; management of the
26 storage, collection, transportation, treatment, utilization, processing and final disposal of solid waste; or
27 resource recovery from solid waste; and facilities necessary or convenient to such activities.

28 (19) "Source separate" means that the person who last uses recyclable material separates the recyclable
29 material from solid waste.

30 [(13)] (20) "Transfer station" means a fixed or mobile facility normally used, as an adjunct of a solid waste
31 collection and disposal system or resource recovery system, between a collection route and a disposal site,
32 including but not limited to a large hopper, railroad gondola or barge.

33 [(14)] (21) "Waste" means useless or discarded materials.

34 (22) "Wasteshed" means an area of the state having a common solid waste disposal system or designated by
35 the commission as an appropriate area of the state within which to develop a common recycling program.

36 SECTION 15. ORS 459.015 is amended to read:

37 459.015. (1) The Legislative Assembly finds and declares that:

38 (a) The planning, development and operation of recycling programs is a matter of state-wide concern:

39 (b) The opportunity to recycle should be provided to every person in Oregon.

40 (c) There is a shortage of appropriate sites for landfills in Oregon.

Results of the Portland Backyard Burning Survey
October 1983

A random telephone survey of 235 households in the Portland Metropolitan area was conducted in October, 1983. The survey was designed to determine public attitude on backyard burning. The questions were designed and then reviewed by an outside research agency, Northwest Attitudes. Department of Environmental Quality staff and a volunteer from the Oregon Lung Association made the calls during the day and evening hours, the week of October 17 through October 21. The results of the survey are accurate to within $\pm 6\%$. A copy of the questionnaire is attached, and the results are listed below.

- | | |
|---|--|
| 1. Do you burn your yard debris? | Yes 35%
No 56%
Don't have a yard 9% |
| 2. Do you take any of your yard debris to a disposal or recycling facility? | Yes 44%
No 44%
Don't know 3%
Don't have a yard 9% |
| 3. Is any of your yard debris picked up with your garbage? | Yes 49%
No 40%
Don't know 2%
Don't have a yard 9% |
| 4. Do you favor or oppose maintaining the current 3 month Spring and 3 month Fall burn periods? | Favor 70%
Oppose 16%
Don't know 14% |
| 5. Do you favor or oppose implementing a burning permit fee system during the Spring/Fall burn periods? | Favor 29%
Oppose 62%
Don't know 9% |
| 6. Do you favor or oppose a ban on backyard burning? | Favor 22%
Oppose 68%
Don't know 10% |
| 7. Which of the 3 alternatives do you think is most acceptable? | |
| a. Maintain the current 3 month Spring/Fall burn periods, or | 63% |
| b. Implement a burning permit fee system, or | 12% |
| c. Ban backyard burning | 15% |
| d. Don't know | 11% |

EQC
Downward
AQ

JEFF KAISER
1401 S.E. 145TH
PORTLAND, OR.
97233

22 Nov. 1984

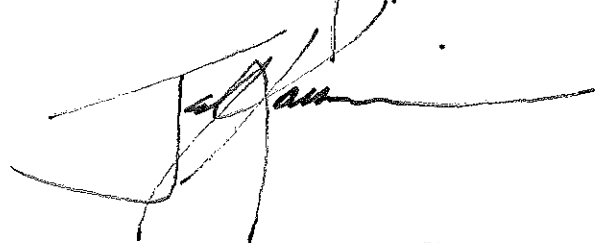
ENVIRONMENTAL QUALITY COMMISSION
BOX 1760
PORTLAND, OR. 97204

DEAR COMMISSION,

I WANT TO EXPRESS MY GRATITUDE
AND SUPPORT FOR YOUR COURAGEOUS
DECISION REGARDING THE PROPOSED
BAN ON BACKYARD BURNING. YOU'VE
RESTORED MY FAITH IN YOUR MISSION
TO IMPROVE THE PORTLAND AIR SHED.

MY FAMILY AND I THANK YOU.

SINCERELY,



State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
NOV 25 1983
OFFICE OF THE DIRECTOR

EQC
Downing
AQ

16906 Cherry Crest Drive
Lake Oswego, Oregon 97034
November 23, 1983

Oregon Environmental
Quality Commission
522 SW Fifth
Portland, Oregon
97204

Dear People:

Here's one who is confused. I clipped the November 9, 1983 Oregonian article which announced, "Backyard burning regulations to last through '86." Good, I thought. Yet ten days later came "EQC votes ban on Portland backyard burning."

Please let me object--strenuously. And I believe and practice recycling--even to saving leaves--wish I had more--on the garden and flower beds, though admitting not yet completing raking the lawn areas. My garbage collections are one or two cans--a year. This is done by separating metals and glass which I take to the Lake Oswego high recycling center. Newspapers are rolled for fireplace logs, and they include much of the junk mail. Egg shells go on hydranges, wet garbage is collected in a can and buried by whatever plants seem most to need this compost that doesn't have to be handled another time. Then whatever is burnable--goes into the fireplace or on the outdoor pile for burning.

This year the piles to be burned haven't been bad. But the winters of big freeze damage left huge piles--far too large to be hauled elsewhere, or ground up. They probably were six feet high and totaled at least 50 feet in length. After all there are nearly 50 trees on this 1½ acres, plus plenty of shrubs and at least 100 rose bushes. Many of the trees and shrubs are large.

It is my understanding that the Portland metropolitan area is rapidly using up landfills for garbage. I've read that some of the flat areas of the country have built some hills for recreational areas--on landfills. But how many hills would it be possible to "build" in this area? How is the community recycling burning plant idea to produce heat working out? As I remember the special areas of piles for burning produced such enormous piles the smoke really was terrible. Which is the worst--many small fires spread over a fairly long period--subject of course to the air pollution index--or--what?

You have a problem--and so do most of us Oregonians who live in this lush green land. We all need to recycle. But when you require considerable transportation of huge amounts--you burn more gas too,--and have you solved your problem?

Here's for a continuation of burning--weather and EQC permitting.

Thank you, sincerely

Elizabeth Ryan
Elizabeth Ryan

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

RECEIVED

NOV 25 1983

OFFICE OF THE DIRECTOR

MRS. KENNETH C. ROSS
4715 S.W. 18TH PLACE
PORTLAND, OREGON 97201

EQC
Downing
AQ

November 21, 1983

Oregon Environmental Quality Commission
522 SW Fifth Avenue P O. Box 1760
Portland, Oregon 97207

Dear Sirs:

I am writing to commend you for your vote on November 18
to permanently ban backyard burning in Portland.

We live in the west hills of Portland and are bothered
by big clouds of smoke when neighbors burn their trash
on burning days. As we look at the view we have of the
Tualatin Valley, we see nothing but what appears to be
a thick fog and the beautiful scenery is obscured.

In order to give you a visual example of what we see
from our home on a burning day, I am enclosing some photos
we took from our picture window this past year.
We believe these are self-explanatory.

We sincerely hope that the burning ban will be upheld and
please feel free to call on me if I can assist in anyway
to keep this in force in Portland.

Sincerely,
Mildred I. Ross
Mildred I. Ross

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
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NOV 25 1983

OFFICE OF THE DIRECTOR



Rollins Burdick Hunter of Oregon, Inc.
200 Market Building, Portland, Oregon 97201 / Telephone 503 224-9700

formerly Cole, Clark & Cunningham, Inc.

EQC
Down Arrow
AQ

**ROLLINS BURDICK
HUNTER**

November 21, 1983

The Oregon Environmental Quality Commission
522 S.W. Fifth
Portland, Oregon

Re: Ban on Backyard Burning

Gentlemen:

Thank you for taking a firm stand on backyard burning! The headline in Saturday's paper made this family very happy.

My husband suffers from emphysema. This fall on days when backyard burning was allowed, it affected him so severely that he could only be up for a few minutes at a time. We don't have to check the papers to see when the pollution index is up, we can tell by how he is feeling.

If, in the future, you need someone to testify, let me know. I would be happy to be of help.

Cordially,

Dianne Knapp

Dianne S. Knapp
2328 S W Vermont
Portland, Oregon 97219
245-6752

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
NOV 25 1983

OFFICE OF THE DIRECTOR

LEAGUE of WOMEN VOTERS of PORTLAND

610 DEKUM BUILDING 519 S.W. 3rd
TELEPHONE 228-1676
PORTLAND, OREGON 97204

EQC
Downarrow
AQ



November 22, 1983

Oregon Environmental Quality Commission
P. O. Box 1760
Portland, Oregon 97207

Re: Backyard Burning

Dear Commission Members:

The League of Women Voters of Portland commend you on your recent stand to ban backyard burning. We appreciate the courage and determination that action required.

Our League members look forward to supporting your efforts with this important issue.

Sincerely yours,

Ann Porter
Ann Porter, President
League of Women Voters of Portland

Marydee Sklar
Marydee B. Sklar, Chair
Natural Resources Committee

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
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EQC
Down
AQ

TOOZE KERR MARSHALL & SHENKER

ROBERT M. KERR
LAMAR TOOZE
L. GUY MARSHALL
ARDEN E. SHENKER
CHAS. R. HOLLOWAY, III
PAUL R. DUDEN
STEPHEN R. FRANK
WM. G. SHERIDAN, JR.
MICHAEL J. GENTRY
NEALE E. CREAMER
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PORTLAND, OREGON 97204-2496
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LAMAR TOOZE, SR.
1895-1971

ADMITTED IN OREGON,
WASHINGTON AND
CALIFORNIA

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

RECEIVED
NOV 18 1983

November 17, 1983

AIR QUALITY CONTROL

Department of Environmental Quality
Air Quality Division
P.O. Box 1760
Portland, Oregon 97207

Re: Backyard Burning

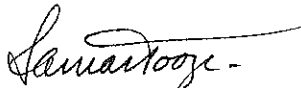
Please accept this in lieu of my appearance at the 18 November EQC "backyard burning" meeting.

I live just outside Portland, the city limit being my East boundary line. On my 2-acre property, covered with vegetation in most of its area, natural debris accumulates constantly. It would become unsightly and a distinct summer fire-hazard if it were not disposed of. The only feasible disposal is burning: the stuff would be impractical to chip and strew, it is much too bulky for curbside pickup, my garbage man would charge for removal at air-express-freight rates.

And, the clincher, all of my neighbors burn copiously, nobody minds, and the effect on air-quality, in terms of density and duration, is insignificant. We are in the Tualatin Valley airshed, not that of Portland, and there's a great deal of burning done in that Valley.

Finally, why in the hell should one family be hindered in small burning in suburban Portland, during gusty ventilation, when another family has the right to burn a thousand acres of grass and powerfully pollute most of the homes in Oregon? If you can tell me why they can, you have told me why I can.

Sincerely.



Lamar Tooze

LT:1

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

RECEIVED

NOV 18 1983

5:10 P.M.

OFFICE OF THE DIRECTOR



TUALATIN RURAL FIRE PROTECTION DISTRICT

P.O. BOX 127 • TUALATIN, OREGON 97062 • PHONE 682-2601 • RUSSELL WASHBURN, CHIEF

EQC
Downp
AQ

November 18, 1983

State of Oregon
Dept. of Environmental Quality

Subject: Hearing on Backyard Burning

Any more changes in rules for backyard burning should also take into consideration agricultural burning rules. If some time in the future backyard burning becomes more limited, or stopped, the same areas need to have agricultural burning limited in the same way. Example: An occupant with a garden can't burn any more debris, but across the road somebody with a 5 acre farm can not only burn, but burn generally year around. Now the person with the small garden is told - "No burning" because of air pollution, while the small farmer across the road is burning merrily away.

Remember -- it is not the DEQ the people contact, but it is the local fire department that is contacted and who gets "the black eye" for not allowing burning or enforcing rules that are different for different people.

Local fire departments spend a lot of time answering questions -- listening, trying to explain the different rules (i.e. backyard burning, agricultural burning, field burning, burning weeds in field burn on an agricultural permit), listening to neighborhood smoke complaints. People are now getting used to the rules. Don't make any more changes until all the open burning is eliminated.

Tualatin Fire District issued 412 agricultural permits during the last year.

Joseph A. Greulich
Batt. Chief/Deputy Fire Marshal

JAG:dm

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
NOV 18 1983

OFFICE OF THE DIRECTOR

EQC
Downs MD
AQ

3959 S. W. Halcyon Road
Tualatin, Oregon, 97062
November 25, 1983

James E. Petersen
Oregon Environmental Quality Commission
522 S.W. 5th Avenue
Portland, Oregon

Dear Mr. Petersen,

I was surprised and delighted to read in the Oregonian about your decision to ban backyard burning in Portland. I do not know whether a total ban is the answer, but certainly the problem of air pollution has increased and needs to be addressed. When the burning season starts, our whole valley fills up with smoke and it stays that way for days. I know my whole family suffers. I would like to hear your suggestions as to how I can promote better air quality.

I think a public education program to promote alternatives is needed. I am sure that your decision will promote that kind of public discussion. Congratulations on your courageous and determined stand. You have my full support.

Sincerely,
Betty Baer
Betty Baer

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
NOV 29 1983
OFFICE OF THE DIRECTOR

WILLIAM (BILL) FRYE
STATE SENATOR, DISTRICT 22
(LANE AND DOUGLAS COUNTIES)

REPLY TO ADDRESS INDICATED:

- Senate Chamber
Salem, Oregon 97310
 1977 Graham Drive
Eugene, Oregon 97405



OREGON STATE SENATE

November 10, 1983

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
NOV 14 1983

Mr. E. Jack Weathersbee
Air Quality Control Division
Department of Environmental Quality
522 S. W. Fifth Avenue
Portland, OR 97204

AIR QUALITY CONTROL

Dear Mr. Weathersbee:

This letter is a followup to our telephone conversation of this date wherein I expressed to you my concern over the possible closure of the Mt. Mazama plywood mill in Sutherlin in view of an impending deadline for purchase of certain air pollution equipment.

Last spring when I first became involved in this matter and was working with Director Bill Young to try and find a solution to the problem, the company was optimistic about being able to meet DEQ's demands, even though its parent company had just entered into a Ch. 11 bankruptcy proceeding. However, a financial re-organization plan cannot be submitted to the bankruptcy court until next spring and thus funds necessary for construction of the dryer emission control equipment will not be available until then.

I realize this mill has been operating for sometime under a variance from air pollution rules. However, no one is contending that its continued operation presents any environmental or health hazard. Indeed, it is primarily a "cosmetic condition."

As you know, Sutherlin is essentially a one-industry town. Mt. Mazama employs 185 persons and has a monthly payroll of \$450,000. The closure of the mill will effectively close down the town. I am deeply concerned for the future of this community unless every reasonable effort is made by the state to avoid the drastic remedy of forced closure. North Douglas County is particularly hard hit economically. The Bohemia plant at Drain has just closed. This would be the very worst time for Mt. Mazama to have to cease operation.

At the present time Mt. Mazama has a November 20 deadline for purchasing necessary equipment, which is expected to cost \$500,000. The Environmental Quality Commission will meet November 18 and I understand this issue is on the agenda. I would not understate the importance of the Commission's responsibility to maintain and

Item N

Mr. E. Jack Weathersbee
Page 2
November 10, 1983

improve the quality of the airshed. But I do stress that the Commission is also granted authority to allow a variance if strict compliance with DEQ rules would result in substantial curtailment or closing down of a business, plant or operation. ORS 468.345(1)(c). The Commission is also required to consider the equities involved in the advantages and disadvantages to residents and those conducting the activity for which the variance is sought. ORS 468.345(4).

I would urge the Commission to carefully consider any request for continuance of the variance as long as there is a reasonable probability that compliance will ultimately be attained.

Sincerely yours,



WILLIAM (BILL) FRYE
State Senator

WFF/flw

cc: James E. Petersen, Chairman
Environmental Quality Commission